

# Mathematics Grade 2

By:  
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# Mathematics Grade 2

**By:**

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**Online:**

< <http://cnx.org/content/col11131/1.1/> >

**C O N N E X I O N S**

Rice University, Houston, Texas

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# Chapter 1

## Term 1

### 1.1 Friends<sup>1</sup>

#### 1.1.1 MATHEMATICS

#### 1.1.2 Mathematics in the world around us

#### 1.1.3 EDUCATOR SECTION

#### 1.1.4 Memorandum

#### 1.1.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

#### MODULE 1

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m22584/1.1/>>.

Critical and developmental outcomes:	Pages:
CO 1	E-4, 10, 11, 14, 18, 19, 20, 21, 24
CO 2	E-1, E-5, 15, 25
CO 3	3, 4, E-2, 16, 17
CO 4	5
CO 5	1, 7, 8, 9, 12, 13, 22
CO 6	28
CO 7	5, 6, 27, 28, 29
CO 8	26, E-9

Table 1.1

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- **A healthy environment:** This is our responsibility – what can we do about keeping our environment healthy?

Educator's page

- Each learner has page 2 which they can colour and put into a plastic sleeve until the completion of page 6.
- Discussion of the friends will follow
- Who are they? Names? How many?
- Who is first? second? third? etc.
- Who comes after Mo, etc?before Pat, etc.? between Sisulu and Ann?
- Are they all the same - Why not?
- Are they different? How do you know? Give reasons. Here are some clues to help you.
- Look at their hair - long/short.Clothes.Lengths - tall/short.
- There are some things that are the same.
- Clues:

Look at eyes/each one has 2 eyes.

- Count the eyes in two's.
- Ears? Count the ears in two's.
- Hands? Count in two's.
- Feet? Count in two's.
- Shoes? Count in two's.
- Legs? Count in two's.
- Arms? Count in two's.
- Noses? Count in \_\_?
- Mouth? Count in \_\_?
- Fingers on one hand / count in 5's.
- Fingers on 2 hands / count in 10's.
- Toes on one foot / count in 5's.
- Toes on two feet / count in 10's.

### 1.1.6

LO 1.2	<input type="text"/>
--------	----------------------

Table 1.2

### 1.1.7 LEANER SECTION

#### 1.1.8 Content

##### 1.1.8.1 ACTIVITY: Friends [LO 1.4, LO 1.1]

- Tell your friends who you are.

My name is \_\_\_\_\_

I am \_\_\_\_\_ years old.

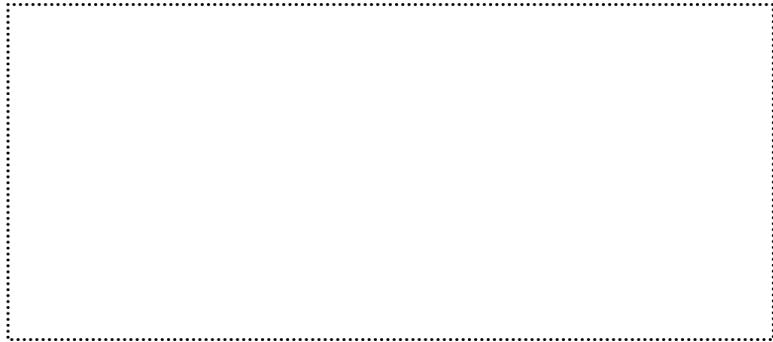
It is my first day in Grade \_\_\_\_\_

- Draw a picture in each block.



Figure 1.1

Yesterday



**Figure 1.2**

---

Today

---



**Figure 1.3**

---

Tomorrow

---

LO 4.4	<input type="checkbox"/>
--------	--------------------------

**Table 1.3**

My friends



Figure 1.4

These are my friends.

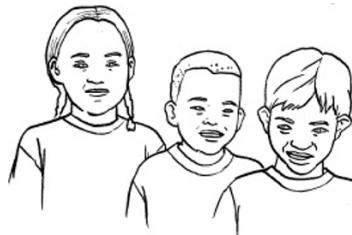


Figure 1.5

- I have \_\_\_\_\_ friends.

- There are \_\_\_\_\_ boys and \_\_\_\_\_ girls.

- There are \_\_\_\_\_ boys than girls.

more/less/the same number of

- They all have names.

First is Liz, second is \_\_\_\_\_,  
third is \_\_\_\_\_, fourth is \_\_\_\_\_,

fifth is \_\_\_\_\_, sixth is \_\_\_\_\_, eighth is \_\_\_\_\_,  
 seventh is \_\_\_\_\_, ninth is \_\_\_\_\_, and last is \_\_\_\_\_,  
 \_\_\_\_\_

---



Figure 1.6

Sally comes after \_\_\_\_\_  
 Mike comes before \_\_\_\_\_  
 Tom is between \_\_\_\_\_ and \_\_\_\_\_  
 1st 2nd 3rd 4th \_\_\_\_\_

---

LO 1.1	LO 1.4	
--------	--------	--

Table 1.4

Numbers also have names.

- Write their names:

1 \_\_\_\_\_  
 2 \_\_\_\_\_  
 3 \_\_\_\_\_  
 4 \_\_\_\_\_  
 5 \_\_\_\_\_  
 6 \_\_\_\_\_  
 7 \_\_\_\_\_  
 8 \_\_\_\_\_  
 9 \_\_\_\_\_  
 10 \_\_\_\_\_

---

- Seven comes after \_\_\_\_\_
- Three comes before \_\_\_\_\_
- Five comes between \_\_\_\_\_ and \_\_\_\_\_

- Fill in the missing numbers.

0	1		3			7			10
---	---	--	---	--	--	---	--	--	----

Table 1.5

10	9								
----	---	--	--	--	--	--	--	--	--

Table 1.6

LO 1.3		LO 1.10	
--------	--	---------	--

Table 1.7

All about my friends.

---



Figure 1.7

- We are all \_\_\_\_\_ (the same / different) have long hair.
- \_\_\_\_\_ have short hair. (How many?)
- My graph

The length of my friends' hair									
Long hair									
Short hair									
friends	1	2	3	4	5	6	7	8	9
									10

Table 1.8

- Colour the blocks red to show the number of friends that have long hair.

- Colour the blocks blue to show the number of friends that have short hair.

---



**Figure 1.8**

---

Write:

- There are \_\_\_\_\_ with long hair. (more/less)
- There are \_\_\_\_\_ with short hair. (more/less)
- Count the children in the class with long hair. \_\_\_\_\_ have long hair.
- Count the children in the class with short hair. \_\_\_\_\_ have short hair.

LO 5.1		LO 5.2		LO 5.4		LO 5.5	
--------	--	--------	--	--------	--	--------	--

**Table 1.9**

- Count their eyes in 2's.

---

Friend/s	1	2	3	4	5
Eyes	.....	.....	.....	.....	.....

**Figure 1.9**

---

- Count their ears in 2's.

---

Friend/s	1	2	3	4	5
Ears	.....	.....	.....	.....	.....

**Figure 1.10**


---

- Count their fingers in 10's.

Friend/s	1	2	3	4	5
Fingers	.....	.....	.....	.....	.....

**Figure 1.11**


---

- Count their toes in 10's.

Friend/s	1	2	3	4	5
Toes	.....	.....	.....	.....	.....

**Figure 1.12**


---

- Choose a friend. Each one takes some counters.

Guess \_\_\_\_\_  
Count \_\_\_\_\_

LO 1.2	
--------	--

**Table 1.10**

### 1.1.9 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.3 fives from any multiple of 5 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

- 1.4.1 whole numbers to at least 2-digit numbers;
- 1.4.2 common fractions including halves and quarters;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;
- 1.10.2 doubling and halving;
- 1.10.3 using concrete apparatus (e.g. counters);
- 1.10.4 number-lines;

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.4:** We know this when the learner sequences events according to days, weeks, months and years;

**Learning Outcome 5:** The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

**Assessment Standard 5.1:** We know this when the learner collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher (e.g. ‘how many learners are there in each classroom?’);

**Assessment Standard 5.2:** We know this when the learner sorts physical objects to one attribute chosen by the teacher;

**Assessment Standard 5.4:** We know this when the learner draws pictures and constructs pictographs that have a 1-1 correspondence between own data and representations;

**Assessment Standard 5.5:** We know this when the learner describes own or a peer’s collection of objects, explains how it was sorted, and answers questions about it.

## 1.2 The calendar<sup>2</sup>

### 1.2.1 MATHEMATICS

### 1.2.2 Mathematics in the world around us

### 1.2.3 EDUCATOR SECTION

### 1.2.4 Memorandum

### 1.2.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. be culturally and aesthetically sensitive across a range of social contexts;
11. explore education and career opportunities; and
12. develop entrepreneurial opportunities.

### MODULE 1

Critical and developmental outcomes:	Pages:
CO 1	E-4, 10, 11, 14, 18, 19, 20, 21, 24
CO 2	E-1, E-5, 15, 25
CO 3	3, 4, E-2, 16, 17
CO 4	5
CO 5	1, 7, 8, 9, 12, 13, 22
CO 6	28
CO 7	5, 6, 27, 28, 29
CO 8	26, E-9

Table 1.11

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- **A healthy environment:** This is our responsibility – what can we do about keeping our environment healthy?

<sup>2</sup>This content is available online at <<http://cnx.org/content/m22585/1.1/>>.

Educator's page

- Each learner has page 7.
- "Why do we want a calendar?" [ It tells us the days of the week, months of the year and the date. This is important so that we can know when our appointments are, when our birthdays are, which days are school days, which weekends, etc.]
- What is the first day of the week? Sunday.
- Let's say all the days of the week beginning from Sunday.
  
- Questions: - Which day comes after e.g. Monday? After Friday, etc?- Which day comes before e.g. Wednesday? Before Sunday, etc?- Which day comes between Tuesday and Thursday, etc?- At which month of the year are we looking now?- How many days in January?- Count to 31 forward and backward.- On which day is the 3rd of January? How do you know? On which day is the 10th of January?- How many days from the second of January to the tenth?- What day is it today? Today is ..... Tomorrow will be ..... Yesterday was ..... - What is today's date?- When did school begin?- Count all the school days in January.- Which month comes after January?- Learn the song: January, February, March, April...- Read and do the instructions on page 7.

LO 4.2	LO 4.3	
--------	--------	--

Table 1.12

#### 1.2.5.1 LEARNER SECTION

#### 1.2.5.2 Content

#### 1.2.5.3 ACTIVITY: The calendar [LO 1.1, LO 1.4, LO 4.2, LO 4.3, LO 4.4]

- My calendar for .....

My calendar for .....						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<ul style="list-style-type: none"> <li>• January has 31 days.</li> <li>• Count from 1 to 31.</li> <li>• Write the missing numbers in the blocks.</li> </ul>				<ul style="list-style-type: none"> <li>• January has ..... Mondays.</li> <li>• ..... is the first day of the week.</li> <li>• The 3<sup>rd</sup> of January is on a .....</li> </ul>		

Table 1.13

LO 1.1		LO 4.2		LO 4.3		LO 4.4	
--------	--	--------	--	--------	--	--------	--

**Table 1.14**

- My calendar can help me.

\_\_\_\_\_ is the first month of the year.

There are \_\_\_\_\_ days in a week.

Sunday, M\_\_\_\_\_, T\_\_\_\_\_,

W\_\_\_\_\_, \_\_\_\_\_,

Today is \_\_\_\_\_,

Yesterday was \_\_\_\_\_,

Tomorrow will be \_\_\_\_\_,

Tuesday comes after \_\_\_\_\_,

Sunday comes before \_\_\_\_\_,

- Complete these parts of a calendar.

S	M	T	W	Th	F	S
1	2	.....	.....	.....	.....	.....
.....	.....	.....				

**Table 1.15**

LO 4.2		LO 4.3	
--------	--	--------	--

**Table 1.16**

S	M	T	W	Th	F	S
			4	5	.....	.....
.....	.....	.....				

**Table 1.17**

S	M	T	W	Th	F	S
			4	5	.....	.....
.....	.....	.....				

**Table 1.18**

S	M	T	W	Th	F	S
	.....	.....	.....	.....	.....	.....
.....	.....	9	10			

Table 1.19

S	M	T	W	Th	F	S
.....	.....	.....	.....	.....	5	6
.....	.....	.....	.....			

Table 1.20

- Which number comes after ...

5 \_\_\_\_\_ ,  
 8 \_\_\_\_\_ ,  
 3 \_\_\_\_\_ ,  
 7 \_\_\_\_\_ ,  
 1 \_\_\_\_\_

- Which number comes before ...

\_\_\_\_\_ 4 ,  
 \_\_\_\_\_ 8 ,  
 \_\_\_\_\_ 9 ,  
 \_\_\_\_\_ 5 ,  
 \_\_\_\_\_ 7

- Which number comes between ...

6 \_\_\_\_\_ 8 ,  
 3 \_\_\_\_\_ 5 ,  
 7 \_\_\_\_\_ 9 ,  
 4 \_\_\_\_\_ 6

LO 1.4	LO 4.3	
--------	--------	--

Table 1.21

### 1.2.5.3.1 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

- 1.4.1 whole numbers to at least 2-digit numbers;
- 1.4.2 common fractions including halves and quarters;

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.2:** We know this when the learner names in order the days of the week and the months of the year;

**Assessment Standard 4.3:** We know this when the learner calculates elapsed time in:

4.3.1 hours and minutes using clocks;

4.3.2 days, weeks and months using calendars;

**Assessment Standard 4.4:** We know this when the learner sequences events according to days, weeks, months and years;

## 1.3 Doubling and halving<sup>3</sup>

### 1.3.1 MATHEMATICS

#### 1.3.2 Mathematics in the world around us

#### 1.3.3 EDUCATOR SECTION

#### 1.3.4 Memorandum

#### 1.3.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
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#### MODULE 1

Critical and developmental outcomes:	Pages:
CO 1	E-4, 10, 11, 14, 18, 19, 20, 21, 24
CO 2	E-1, E-5, 15, 25
CO 3	3, 4, E-2, 16, 17
CO 4	5
CO 5	1, 7, 8, 9, 12, 13, 22
CO 6	28
CO 7	5, 6, 27, 28, 29
CO 8	26, E-9

Table 1.22

---

<sup>3</sup>This content is available online at <<http://cnx.org/content/m22587/1.1/>>.

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- A healthy environment: This is our responsibility – what can we do about keeping our environment healthy?

Educator's page

### Doubling

- Pick up 1 counter / block / bean in one hand.
- Pick up the same number in the other hand.
- How many?
- How many altogether?
- We can say  $1 + 1 = 2$
- What have we done?
- We have taken the same number in the other hand.
- We say WE HAVE DOUBLED ONE.
- One doubled is equal to 2.
- Follow the same steps with 2, 3, 4 and 5 so that learners understand the concept of doubling.
- Ask each one individually in order to assess whether he understands the term "double" and whether he can work out the doubles.
- How else can we double numbers besides using counters? Draw?
- Look around the room: Can you see any place where numbers are doubled? E.g. 4 windows on the left side and 4 windows on the right side. Lights? Body parts? - eyes, ears, hands, feet, fingers, toes.

### Halving

Halving means sharing out equally between 2 people. Work on the mat, e.g.

- Take 2 counters Share them out between 2 children How many will each get? What happens if we put the 2 counters together again? We will have 2. What is that called? Doubling.
- Take 4 counters.
- Follow steps as for 2
- Take 6
- Take 8
- Take 10

#### 1.3.5.1 LEARNER SECTION

#### 1.3.5.2 Content

#### 1.3.5.3 ACTIVITY: Doubling and halving [LO 1.10, LO 1.2, LO 1]

Doubling and Halving

Liz and Mike go for a walk.

They see all these doubles. They can halve them too.

Can you?



Figure 1.13

- Make sums with your doubles.

---

---

---

---

LO 1.10	<input type="text"/>
---------	----------------------

Table 1.23

- Doubling and halving

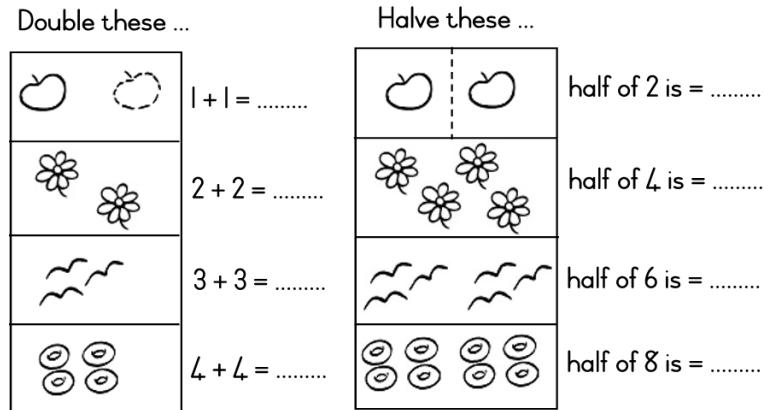


Figure 1.14

Which other numbers can you double?	Now halve them.	
10 .....	Half of	20 .....
20 .....		40 .....
100 .....		200 .....
200 .....		400 .....

Table 1.24

Which other numbers can you halve?		Double these.
Try	40 .....	20 .....
	60 .....	30 .....
	80 .....	40 .....

Table 1.25

LO 1.10	<input type="text"/>
---------	----------------------

Table 1.26

- I keep my things tidy.

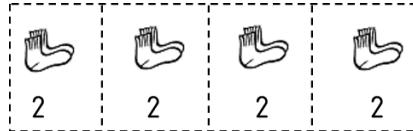


Figure 1.15

- I have \_\_\_\_\_ pairs of socks.
- I have \_\_\_\_\_ socks altogether.

$$2 + 2 + 2 + 2 = \underline{\hspace{2cm}}$$

2 taken 4 times is equal to \_\_\_\_\_

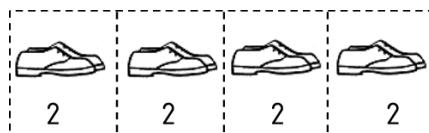


Figure 1.16

- I have \_\_\_\_\_ pairs of shoes.
- I have \_\_\_\_\_ shoes altogether.

$$2 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

2 taken \_\_\_\_\_ times is equal to \_\_\_\_\_

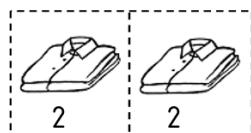


Figure 1.17

- My shirts are stacked in 2's.

- I have \_\_\_\_\_ shirts altogether.

$2 + 2 = \underline{\hspace{2cm}}$   
 2 taken \_\_\_\_\_ times is equal to \_\_\_\_\_

LO 1.2	
--------	--

Table 1.27

Colour: 2 red 2 blue	Count in 2's	Colour: 3 red 3 blue	Count in 3's
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		

Table 1.28

- I stack my toys

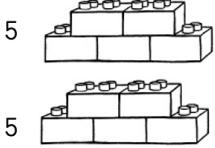
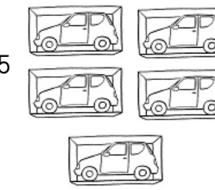
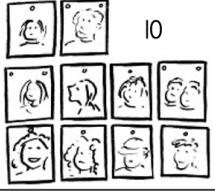
 5	<p>I stack my Lego in 5's.          I have 2 stacks of 5's.          I have ..... Legos altogether.  <math>5 + 5 = 10</math> taken ..... times is equal to .....</p>
 5	<p>I stack my cars in 5's.          I have ..... stacks of 5's.          I have ..... cars altogether.  <math>5 + 0 = \dots</math>          5 taken ..... time is equal to .....</p>
 10	<p>I pin up my photos in 10's.          I have ..... board of 10's.          I have ..... photos altogether.  <math>10 + 0 = \dots</math>          10 taken 1 time are equal to .....</p>

Figure 1.18

LO 1	
------	--

Table 1.29

- Complete

3 boys wear ..... socks.  $2 + 2 + 2 = \dots$   
 5 girls have ..... eyes.  $2 + 2 + 2 + 2 + 2 = \dots$   
 1 mom has ..... hands.  $2 + 0 = \dots$   
 Pat and Ann have ..... hands.  $2 + 2 = \dots$   
 Mike and Sisulu have ..... shoes.  $2 + 2 = \dots$

### 1.3.6 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.3 fives from any multiple of 5 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;

- 1.10.2 doubling and halving;
- 1.10.3 using concrete apparatus (e.g. counters);
- 1.10.4 number-lines;

## 1.4 One more and problem solving<sup>4</sup>

### 1.4.1 MATHEMATICS

#### 1.4.2 Mathematics in the world around us

#### 1.4.3 EDUCATOR SECTION

#### 1.4.4 Memorandum

#### 1.4.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

### MODULE 1

Critical and developmental outcomes:	Pages:
CO 1	E-4, 10, 11, 14, 18, 19, 20, 21, 24
CO 2	E-1, E-5, 15, 25
CO 3	3, 4, E-2, 16, 17
CO 4	5
CO 5	1, 7, 8, 9, 12, 13, 22
CO 6	28
CO 7	5, 6, 27, 28, 29
CO 8	26, E-9

Table 1.30

- **Integration of Themes:** Friends

---

<sup>4</sup>This content is available online at <<http://cnx.org/content/m22588/1.1/>>.

- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- A healthy environment: This is our responsibility – what can we do about keeping our environment healthy?

#### 1.4.5.1 Educator's page

One more

Teacher will assess whether learners understand the concept of 1 more by doing the following on the mat:

[U+263B] Put out 4 counters. Make it 1 more (different colour). How many?

[U+263B] Do the same with 7, 3, 9, etc.

[U+263B] How many children are there in the room? We get 1 more - how many are there now?

Let 4 or 5 learners stand in front. How many children are there?

One more?

[U+263B] Now observe and assess as similar steps are done making ONE LESS.

Problem Solving

[U+263B] Learners need to be confronted with problem solving many times so that they are able to work out their own strategies.

[U+263B] Take for example the problem at the bottom of page 15.

[U+263B] Set a similar problem and observe how the learners attempt to solve it.

[U+263B] Discuss their different strategies.

[U+263B] They may use counters or draw pictures or do it mentally, etc.

[U+263B] They must be able to explain their strategies in words.

[U+263B] Discuss different strategies.

#### 1.4.5.2 LEARNER SECTION

##### 1.4.5.3 Content

##### 1.4.5.4 ACTIVITY: One more and problem solving [LO 1.9, LO 1.11]

- Complete:

---



**Figure 1.19**

---

9 boys and 1 more are \_\_\_\_\_ boys.

4 girls and 1 more are \_\_\_\_\_ girls.  
 2 sticks and 1 more are \_\_\_\_\_ sticks.  
 5 socks and 1 more are \_\_\_\_\_ socks.

---

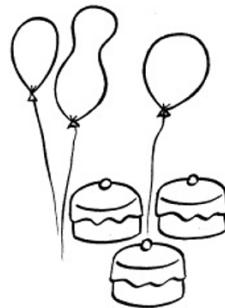


Figure 1.20

7 cakes and 1 less are \_\_\_\_\_ cakes.  
 9 balloons and 1 less are \_\_\_\_\_ balloons.  
 6 pens and 1 less are \_\_\_\_\_ pens.  
 3 girls and 1 less are \_\_\_\_\_ girls.  
 There are 5 boys at my house. Another boy comes to play.  
 Now we are \_\_\_\_\_ boys.  
 Five girls go for a walk. One girl goes home. Now there are \_\_\_\_\_ girls.

LO 1.9	LO 1.11	
--------	---------	--

Table 1.31

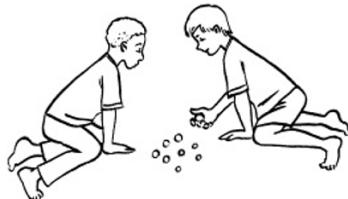


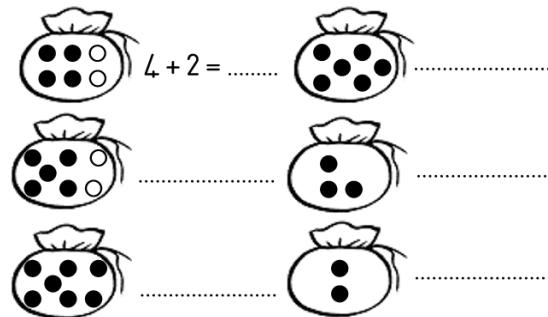
Figure 1.21

---

- We play marbles. Each one wins two more.

Draw two more marbles in each bag.

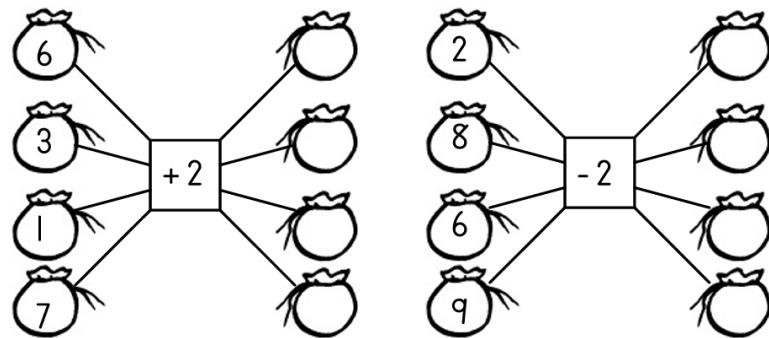
---



**Figure 1.22**

---

- Complete:



**Figure 1.23**

---

- Jo lost 2 marbles. He has 6 marbles left. He had ..... marbles at the start of the game.
- Say how you did the sum or draw the marbles.

LO 1.9	LO 1.11	
--------	---------	--

**Table 1.32**

### 1.4.6 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

1.9.2 multiplication of whole numbers with solutions to at least 20;

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems.

## 1.5 Number facts<sup>5</sup>

### 1.5.1 MATHEMATICS

#### 1.5.2 Mathematics in the world around us

#### 1.5.3 EDUCATOR SECTION

#### 1.5.4 Memorandum

#### 1.5.5 Critical and developmental outcomes:

The learners must be able to:

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3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. be culturally and aesthetically sensitive across a range of social contexts;
11. explore education and career opportunities; and
12. develop entrepreneurial opportunities.

MODULE 1

Critical and developmental outcomes:	Pages:
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CO 8	26, E-9

<sup>5</sup>This content is available online at <<http://cnx.org/content/m22597/1.1/>>.

**Table 1.33**

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- **A healthy environment:** This is our responsibility – what can we do about keeping our environment healthy?

Educator's page

#### Number Facts

[U+263B] Use flashcards with +1, -1, +2, -2 sums. Flash and assess whether learners can say the answers reasonably quickly or whether they still need counters, etc.

[U+263B] Do an example of the hidden picture (page 1)

1. . .

4. . .

7. . .

on the board so that everyone understands how to plot the answers and join the dots which they mark in red.

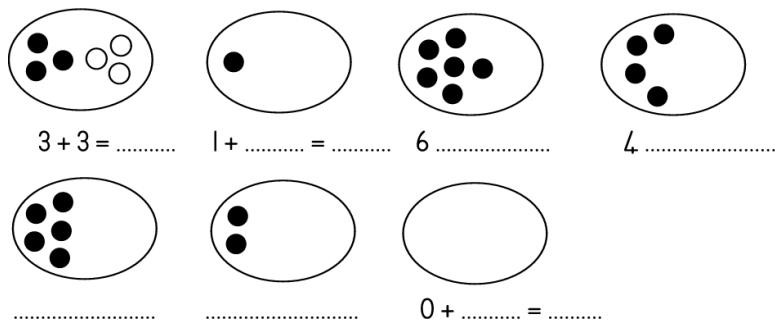
#### 1.5.6 LEARNER SECTION

#### 1.5.7 Content

##### 1.5.7.1 ACTIVITY: Number facts [LO 1.4, LO 1.1]

Smarties on a plate.

- I add three more to every plate.

**Figure 1.24**

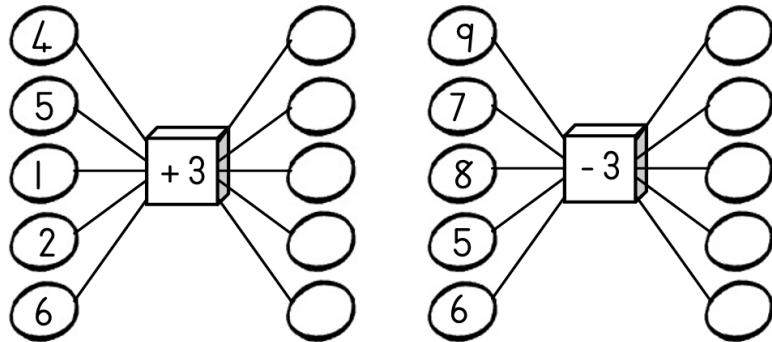


Figure 1.25

- Sisulu has 6 smarties. He eats three. Now he has ..... smarties left.
- Des ate three smarties. He has 4 smarties left. He had ..... smarties on his plate to begin with.
- Say or show how you did the sum.

LO 1.9	LO 1.11	
--------	---------	--

Table 1.34

More fun!

- Use the answers to draw a red dot. Join the dots to make a picture.

1. 2. 3.	1. $4 - 3 =$ .....	4. $5 + 3 =$ .....	7. $6 - 3 =$ .....
4. 5. 6.	2. $7 - 3 =$ .....	5. $6 + 3 =$ .....	8. $5 - 3 =$ .....
7. 8. 9.	3. $5 + 2 =$ .....	6. $3 + 3 =$ .....	9. $4 - 3 =$ .....

Figure 1.26

What did you draw? \_\_\_\_\_

- Follow the road to Pat's house.

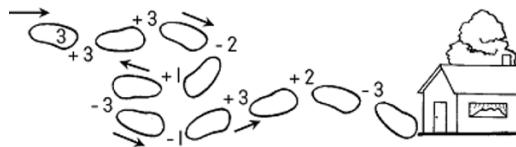


Figure 1.27

- Say the answers quickly to a friend. Now write the answers.

$$\begin{array}{l} 4 + 3 = . \quad 5 - 3 = . \quad 9 - 3 = . \\ 3 + 3 = . \quad 6 + 1 = . \quad 7 + 2 = . \\ 7 - 2 = . \quad 1 + 3 = . \quad 8 - 3 = . \end{array}$$

- Choose and colour one.



Figure 1.28

LO 1.12	LO 1.9	LO 3.1	
---------	--------	--------	--

Table 1.35

### 1.5.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

1.9.2 multiplication of whole numbers with solutions to at least 20;

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems;

**Assessment Standard 1.12:** We know this when the learner checks the solution given to problems by peers.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.1:** We know this when the learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the school environment and in pictures, including:

3.1.1 boxes (prisms), balls (spheres) and cylinders;

3.1.2 triangles, squares and rectangles;

3.1.3 circles.

## 1.6 Sums in shapes at the fun fare<sup>6</sup>

### 1.6.1 MATHEMATICS

#### 1.6.2 Mathematics in the world around us

#### 1.6.3 EDUCATOR SECTION

#### 1.6.4 Memorandum

#### 1.6.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. be culturally and aesthetically sensitive across a range of social contexts;
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12. develop entrepreneurial opportunities.

#### MODULE 1

Critical and developmental outcomes:	Pages:
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CO 4	5
CO 5	1, 7, 8, 9, 12, 13, 22
CO 6	28
CO 7	5, 6, 27, 28, 29
CO 8	26, E-9

Table 1.36

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- **A healthy environment:** This is our responsibility – what can we do about keeping our environment healthy?

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<sup>6</sup>This content is available online at <<http://cnx.org/content/m22598/1.1/>>.

### 1.6.5.1 LEANER SECTION

### 1.6.5.2 Content

### 1.6.5.3 ACTIVITY: Sums in shapes at the fun fare [LO 1.9]

Sums in Shapes at the Fun Fare

---



**Figure 1.29**

---

- Fill in the missing numbers.

- Write the sums.

$$\begin{array}{r}
 3 \text{ } \underline{\hspace{2cm}} = 5 \\
 2 \text{ } \underline{\hspace{2cm}} = 5 \\
 1 \text{ } \underline{\hspace{2cm}} = 5 \\
 4 \text{ } \underline{\hspace{2cm}} = 5
 \end{array}$$

- Think! Write more sums that make 5.

$$\begin{array}{l}
 5 = \underline{\hspace{2cm}} \quad 5 = \underline{\hspace{2cm}} \\
 5 = \underline{\hspace{2cm}} \quad 5 = \underline{\hspace{2cm}}
 \end{array}$$

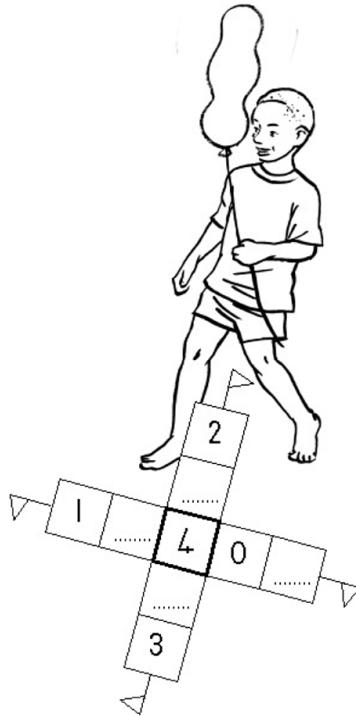


Figure 1.30

- Write the sums.

$$\begin{array}{r}
 1 \\
 - 3 \\
 \hline
 0 \\
 - 2 \\
 \hline
 \end{array} = 4$$

$$\begin{array}{r}
 3 \\
 - 0 \\
 \hline
 2 \\
 - 2 \\
 \hline
 \end{array} = 4$$

$$\begin{array}{r}
 0 \\
 - 2 \\
 \hline
 2 \\
 - 2 \\
 \hline
 \end{array} = 4$$

- Think! Write more sums that make 5.

$$\begin{array}{r}
 5 = \hline
 \end{array} \quad
 \begin{array}{r}
 5 = \hline
 \end{array} \quad
 \begin{array}{r}
 5 = \hline
 \end{array} \quad
 \begin{array}{r}
 5 = \hline
 \end{array}$$

LO 1.9	<input type="text"/>
--------	----------------------

Table 1.37

- Complete:

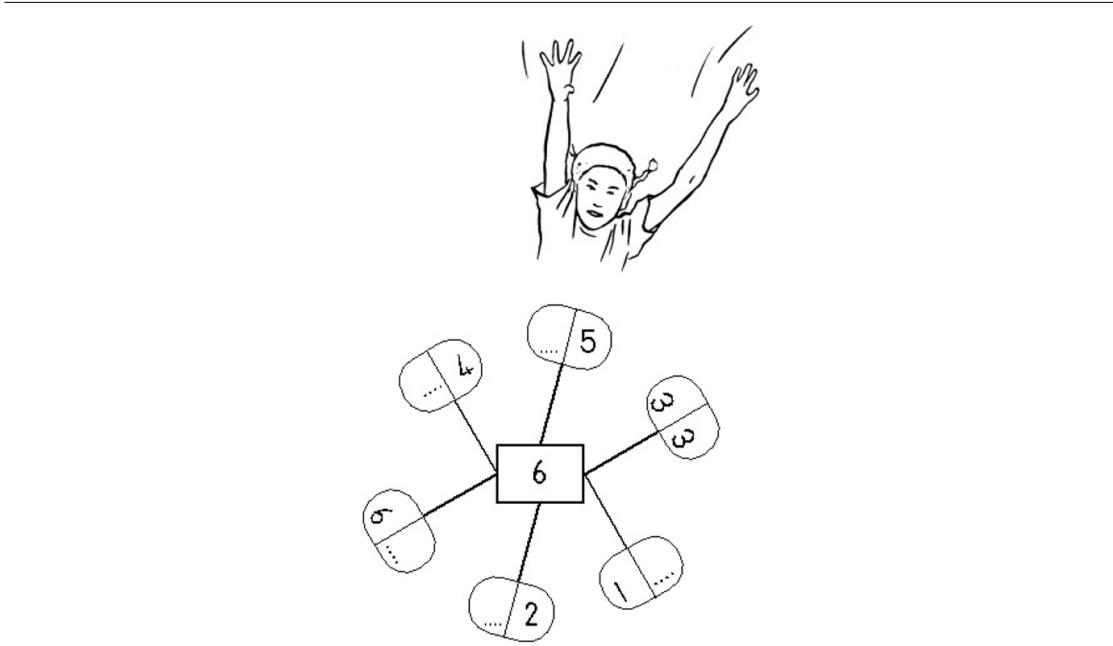


Figure 1.31

---

- Write the number sentences

$$\begin{array}{r} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} = 6$$
$$\begin{array}{r} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} = 6$$

- My own number sentences

$$6 = \text{---} + \text{---} + \text{---}$$
$$6 = \text{---}$$
$$6 = \text{---}$$

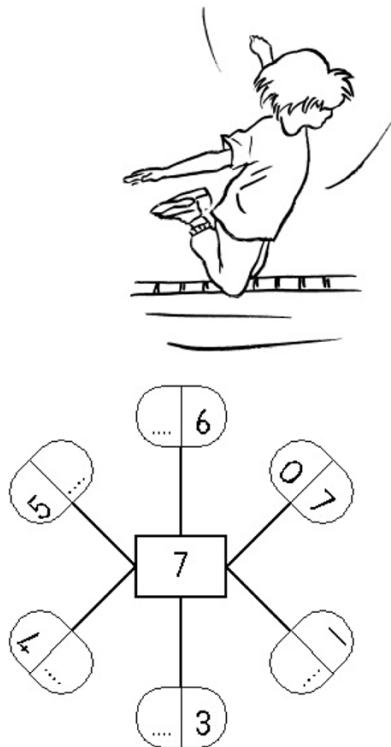


Figure 1.32

- Write the number sentences

$$\begin{array}{r} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} = 7$$

$$\begin{array}{r} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} = 7$$

- My own number sentences

$$7 = \text{---} + \text{---} + \text{---}$$

$$7 = \text{---}$$

$$7 = \text{---}$$

LO 1.9	<input type="text"/>
--------	----------------------

Table 1.38

- Complete

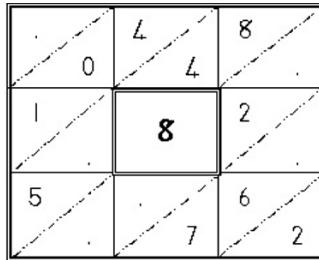


Figure 1.33

- Write the number sentences

$$\underline{\hspace{2cm}} = 8$$

$\underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}}$

- My own number sentences

$$8 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$8 = \underline{\hspace{2cm}}$

$8 = \underline{\hspace{2cm}}$

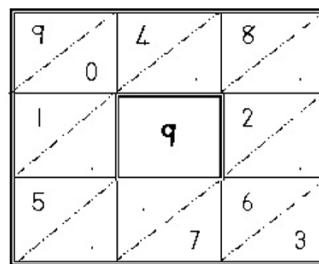


Figure 1.34

- Write the number sentences

$$\underline{\hspace{2cm}} = 9$$

$\underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}}$   
 $\underline{\hspace{2cm}}$

- My own number sentences

$$9 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$$

$$9 = \underline{\hspace{3cm}}$$

$$9 = \underline{\hspace{3cm}}$$

LO 1.9	
--------	--

Table 1.39

### 1.6.6 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

1.9.2 multiplication of whole numbers with solutions to at least 20;

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems.

## 1.7 Tall and short<sup>7</sup>

### 1.7.1 MATHEMATICS

### 1.7.2 Mathematics in the world around us

### 1.7.3 EDUCATOR SECTION

### 1.7.4 Memorandum

### 1.7.5 Critical and developmental outcomes:

The learners must be able to:

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develop entrepreneurial opportunities.

### MODULE 1

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<sup>7</sup>This content is available online at <<http://cnx.org/content/m22603/1.1/>>.

Critical and developmental outcomes:	Pages:
CO 1	E-4, 10, 11, 14, 18, 19, 20, 21, 24
CO 2	E-1, E-5, 15, 25
CO 3	3, 4, E-2, 16, 17
CO 4	5
CO 5	1, 7, 8, 9, 12, 13, 22
CO 6	28
CO 7	5, 6, 27, 28, 29
CO 8	26, E-9

**Table 1.40**

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- **A healthy environment:** This is our responsibility – what can we do about keeping our environment healthy?

#### 1.7.5.1 LEARNER SECTION

##### 1.7.5.2 Content

##### 1.7.5.3 ACTIVITY: Tall and short [LO 1.9]

Look at the pictures

- Mark the tall buildings with a red ✓.
- Mark the tall people with a red ✓.
- Mark the short people with a blue X.
- Mark the tall trees with a red ✓.
- Mark the short trees with a blue X.
- Mark the tall grasses with a red ✓.
- Mark the short grasses with a blue X.
- Count the tall objects. \_\_\_\_\_ are tall.
- Count the short objects. \_\_\_\_\_ are short.
- The tall building is \_\_\_\_\_ than my pencil.  
(taller / shorter)
- I tell my friend how I know this.

LO 4.6	<input type="text"/>
--------	----------------------

**Table 1.41**



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Figure 1.35

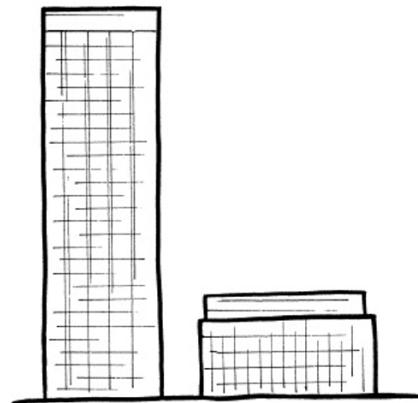


Figure 1.36

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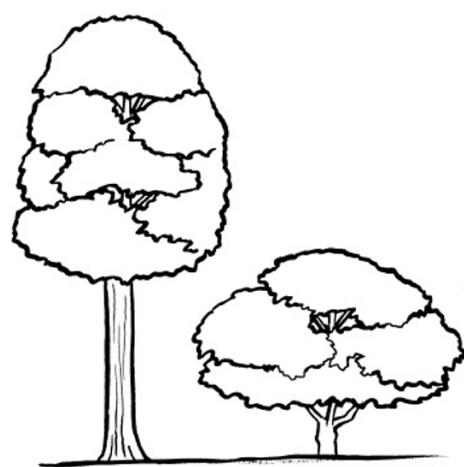


Figure 1.37

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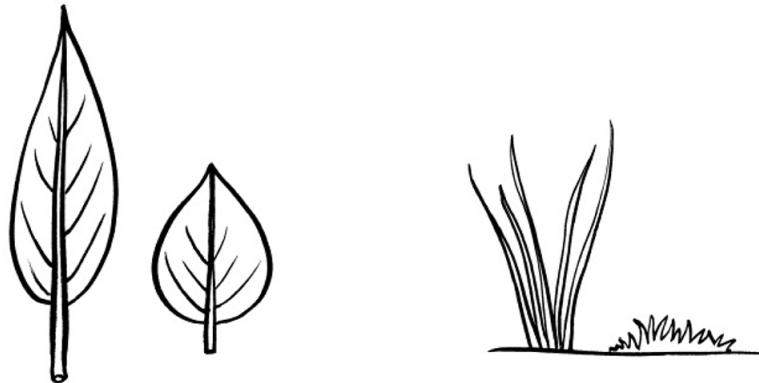


Figure 1.38

Do these on the board

- What can you see that is the same about:

$$6 + 1 = 7$$

and  $1 + 6 = ?$

- Are they true number sentences?
- What is different about them?
- Let's write them like this

---

$\triangle 6$	$+$	$\square 1$	$=$	$\circ 7$
$\square 1$	$+$	$\triangle 6$	$=$	$\circ 7$

Figure 1.39

---

- In which shape is 6? 1? 7?
- What has happened to the 6's and the 1's places?
- Do you know which numbers should be in these boxes?

---


$$\triangle + \square = 5$$

**Figure 1.40**


---

- Now keep the same numbers. Just change their places.

$$\square + \triangle = 5$$

**Figure 1.41**


---

- Make sure they are true number sentences.
- Try:

$$\begin{array}{rcl} \triangle & + & \square = 3 \\ \square & + & \triangle = 3 \end{array}$$

**Figure 1.42**


---

LO 1.9	<input type="text"/>
--------	----------------------

**Table 1.42**

### 1.7.6 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

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## 1.8 Number Puzzles<sup>8</sup>

### 1.8.1 MATHEMATICS

#### 1.8.2 Mathematics in the world around us

#### 1.8.3 EDUCATOR SECTION

#### 1.8.4 Memorandum

#### 1.8.5 Critical and developmental outcomes:

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#### MODULE 1

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Table 1.43

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- **A healthy environment:** This is our responsibility – what can we do about keeping our environment healthy?

---

<sup>8</sup>This content is available online at <<http://cnx.org/content/m22606/1.1/>>.

### 1.8.5.1 Educators page

Look at the shapes around you.

- What does the window look like? (Learner describes the shape of the window.)
- Who can draw the shape of the window?

How many sides?

How many corners?

- This shape is called a rectangle.
- Teacher does the same with circles, triangles and squares.
- Let them discuss each shape; what its characteristic is and what each one is called.
- Ask learners to bring things, e.g. boxes, containers, objects, bottles, etc., to school.
- Let learners sort them according to their shapes and identify these shapes.
- Discuss their shapes.

LO 3.1	LO 3.2	
--------	--------	--

Table 1.44

### 1.8.6 LEARNER SECTION

#### 1.8.7 Content

##### 1.8.7.1 ACTIVITY: Number Puzzles [LO 1.9, LO 1.11, LO 3.1, LO 3.2]

- Complete:

---

 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span>	 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">7</span>
 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span>	 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">7</span>
 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6</span>	 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">8</span>
 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6</span>	 +  = <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">8</span>

---

Figure 1.43

- Use your own numbers in and and

---

	+		=			+		=	
	+		=			+		=	
	=		+			=		+	
	=		+			=		+	
	+		=			+		=	
	=		+			=		+	

**Figure 1.44**


---

LO 1.9	
--------	--

**Table 1.45**

On the board.

- Look again at A:

---

	+		=	
	+		=	

**Figure 1.45**


---

- Are they true number sentences?

- Now look at B:

---


$$\begin{array}{rcl} \textcircled{7} & - & \boxed{2} \\ \textcircled{7} & - & \triangle{5} \end{array} = \begin{array}{l} \triangle{5} \\ \boxed{2} \end{array}$$

**Figure 1.46**


---

- How are the sums in A and B different?
- Which two numbers can be subtracted from the 7 to make the number sentences true? Yes, the ones in a [U+25B2] and a [U+25A0].
- Try these.

---


$$\begin{array}{rcl} \textcircled{6} & - & \boxed{4} \\ \textcircled{6} & - & \triangle{2} \end{array} = \begin{array}{l} \triangle{} \\ \boxed{\phantom{0}} \end{array}$$

**Figure 1.47**


---

- Now

---


$$\begin{array}{rcl} \textcircled{8} & - & \triangle{1} \\ \textcircled{8} & - & \boxed{\phantom{0}} \end{array} = \begin{array}{l} \boxed{\phantom{0}} \\ \triangle{} \end{array}$$

**Figure 1.48**

**Table 1.46**

More number puzzles

- Complete:

---

$\bigcirc - \square = \triangle$	$\bigcirc - \square = \triangle$
$\bigcirc - \triangle = \square$	$\bigcirc - \triangle = \square$
$\bigcirc - \triangle = \square$	$\bigcirc - \triangle = \square$
$\bigcirc - \square = \triangle$	$\bigcirc - \square = \triangle$

---

**Figure 1.49**

- Use your own numbers in [U+25CF] and [U+25B2] and [U+25A0].

---

$\bigcirc - \triangle = \square$	$\bigcirc - \triangle = \square$
$\bigcirc - \square = \triangle$	$\bigcirc - \square = \triangle$
$\bigcirc - \square = \triangle$	$\bigcirc - \triangle = \square$
$\bigcirc - \triangle = \square$	$\bigcirc - \square = \triangle$

---

**Figure 1.50**

- Check and see whether you have written a true number sentence.
- Explain how you checked your sum.

**Table 1.47**

- Sally and Des do their sums like this. Can you?

---

Sally writes	$3+4=7$
Des writes	3
	$\begin{array}{r} + 4 \\ \hline 7 \end{array}$

**Figure 1.51**


---

- Who do you think is right? Why?
- Help Des to do these sums.

$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 1 \\ \hline \end{array}$
.....	.....	.....	.....	.....
$\begin{array}{r} 9 \\ - 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ - 1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 4 \\ \hline \end{array}$
.....	.....	.....	.....	.....
$\begin{array}{r} 4 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ - 4 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline \end{array}$
.....	.....	.....	.....	.....

**Figure 1.52**

- I found them: ...



Figure 1.53

- Choose one and colour it.

LO 1.9	<input type="text"/>
--------	----------------------

Table 1.48

### 1.8.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

1.9.2 multiplication of whole numbers with solutions to at least 20;

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.1:** We know this when the learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the school environment and in pictures, including:

3.1.1 boxes (prisms), balls (spheres) and cylinders;

3.1.2 triangles, squares and rectangles;

- circles.

**Assessment Standard 3.2:** We know this when the learner describes, sorts and compares two-dimensional shapes and three-dimensional objects in pictures and the environment according to:

3.2.1 size;

3.2.2 objects that roll or slide.

## 1.9 Assessment<sup>9</sup>

### 1.9.1 MATHEMATICS

#### 1.9.2 Mathematics in the world around us

#### 1.9.3 EDUCATOR SECTION

#### 1.9.4 Memorandum

#### 1.9.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

#### MODULE 1

Critical and developmental outcomes:	Pages:
CO 1	E-4, 10, 11, 14, 18, 19, 20, 21, 24
CO 2	E-1, E-5, 15, 25
CO 3	3, 4, E-2, 16, 17
CO 4	5
CO 5	1, 7, 8, 9, 12,13, 22
CO 6	28
CO 7	5, 6, 27, 28, 29
CO 8	26, E-9

Table 1.49

- **Integration of Themes:** Friends
- **Inclusively:** Although we are all unique, we share many similarities; appearance, sport, education etc.
- **Social Justice:** Friends and their expected behaviour towards one another.
- **A healthy environment:** This is our responsibility – what can we do about keeping our environment healthy?

---

<sup>9</sup>This content is available online at <<http://cnx.org/content/m22608/1.1/>>.

### 1.9.5.1 LEANER SECTION

#### 1.9.5.2 Content

#### 1.9.5.3 ACTIVITY: Assessment [LO 1.3, LO 2.2, LO 1.9]

- I can count. Can you?
- Complete the pattern.

4, 5, ..... , ..... , ..... , ..... , .....

8, 7, ..... , ..... , ..... , ..... , ..... , ..... , 0.

2, 4, ..... , ..... , .....

10, 8, ..... , ..... , ..... , 0.

5, 10, ..... , ..... , ..... , 30.

10, 20, ..... , ..... , ..... , ..... , 70.

Figure 1.54

<b>Before?</b> ..... 9 ..... 3 ..... 6 ..... 4	<b>After?</b> 7 ..... 8 ..... 2 ..... 5 .....	<b>Between?</b> 6 ..... 8 3 ..... 5
<b>One more than</b> 4 ..... 6 ..... 7 ..... 8 .....	<b>Two more than</b> 4 ..... 6 ..... 7 ..... 8 .....	<b>Three more than</b> 4 ..... 6 ..... 7 ..... 2 .....

Figure 1.55

- Write their names

1. \_\_\_\_\_ 7 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_

3 ----- 8 ----- 5 ----- 4 -----

1.3		LO 2.2	
-----	--	--------	--

Table 1.50

- Do I know all these number facts now?

Take this page home and say the answers to your Mummy and / or Daddy. Keep it in your flip file.

---

$2 + 1 = .$	$4 + 3 = .$	$1 - 1 = .$	$6 - 4 = .$	$9 - 1 = .$
$1 + 2 = .$	$3 + 4 = .$	$2 - 1 = .$	$6 - 5 = .$	$9 - 2 = .$
$4 + 1 = .$	$7 + 1 = .$	$2 - 2 = .$	$6 - 6 = .$	$9 - 3 = .$
$1 + 4 = .$	$1 + 7 = .$	$3 - 1 = .$	$7 - 1 = .$	$9 - 4 = .$
$3 + 2 = .$	$6 + 2 = .$	$3 - 2 = .$	$7 - 2 = .$	$9 - 5 = .$
$2 + 3 = .$	$2 + 6 = .$	$3 - 3 = .$	$7 - 3 = .$	$9 - 6 = .$
$5 + 1 = .$	$5 + 3 = .$	$4 - 1 = .$	$7 - 4 = .$	$9 - 7 = .$
$1 + 5 = .$	$3 + 5 = .$	$4 - 2 = .$	$7 - 5 = .$	$9 - 8 = .$
$4 + 2 = .$	$4 + 4 = .$	$4 - 3 = .$	$7 - 6 = .$	$9 - 9 = .$
$2 + 4 = .$	$8 + 1 = .$	$4 - 4 = .$	$7 - 7 = .$	
$3 + 3 = .$	$1 + 8 = .$	$5 - 1 = .$	$8 - 1 = .$	
$6 + 1 = .$	$7 + 2 = .$	$5 - 2 = .$	$8 - 2 = .$	
$1 + 6 = .$	$2 + 7 = .$	$5 - 3 = .$	$8 - 3 = .$	
$5 + 2 = .$	$6 + 3 = .$	$5 - 4 = .$	$8 - 4 = .$	
$2 + 5 = .$	$3 + 6 = .$	$5 - 5 = .$	$8 - 5 = .$	
$5 + 4 = .$	$6 - 1 = .$	$8 - 6 = .$		
$4 + 5 = .$	$6 - 2 = .$	$8 - 7 = .$		
			$6 - 3 = .$	$8 - 8 = .$

Figure 1.56

---

LO 1.9	
--------	--

**Table 1.51**

### 1.9.6 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

- multiplication of whole numbers with solutions to at least 20;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

## 1.10 Friends<sup>10</sup>

### 1.10.1 MATHEMATICS

### 1.10.2 Mathematics in the world around us

### 1.10.3 EDUCATOR SECTION

### 1.10.4 Memorandum

### 1.10.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

- **Integration of Themes:** Friends
- **Social Justice:** Friends should spend time together, e.g. playing games. Discuss in small groups what your attitude towards your friends should be when you play together.
- **A healthy environment:** Why is sport important? Discuss the safety precautions needed when participating in sport at school.

---

<sup>10</sup>This content is available online at <<http://cnx.org/content/m32448/1.1/>>.

- **Inclusively:** Who should be allowed to participate in sport at school? Only team players? Or should the school accommodate everyone? Make your own graph of which learners participate in sport.

- Number concept is extended to 50.
- Counting in 2's, 3's, 4's, 5's and 10's.
- Calendar activities enable learners to order the months and revise ordinals.
- Graph – a weather graph can be completed.
- Bonds of 10 are introduced with many opportunities to reinforce these.
- Measurement activities involving comparisons of height, length, width using related vocabulary.
- Capacity – litre;
- Identifying coins and shapes are included.

## 1.10.6 LEARNER SECTION

### 1.10.7 Content

#### 1.10.7.1 ACTIVITY: Friends [LO 4.2, LO 4.6, LO 5.1, LO 5.2, LO 5.5]

- Here are my friends again. Cut them out and arrange them from the shortest to the tallest. Paste them on the next page.



**Figure 1.57**

LO 4.6	
--------	--

**Table 1.52**

- How did you do?

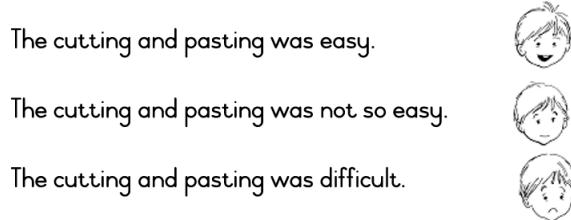


Figure 1.58

- Choose one and colour.
- Complete:

\_\_\_\_\_ is the shortest.  
 \_\_\_\_\_ is the tallest.  
 \_\_\_\_\_ is taller than \_\_\_\_\_  
 \_\_\_\_\_ is shorter than \_\_\_\_\_

- I use my pencil to measure the lengths of my friends' pictures, which I have pasted.
- Complete the lists below.

Names of friends shorter than my pencil.	Names of friends taller than my pencil.

Table 1.53

LO 4.6		LO 5.1		LO 5.2	
--------	--	--------	--	--------	--

Table 1.54

- Let's put the months of the year in order. My birthday is in January.

## ***Image not finished***

Figure 1.59

- Let the number line help you.

1	2	3	4	5	6	7	8	9	10	11	12
J	F	M	A	M	J	J	A	S	O	N	D

**Table 1.55**

1st January

2nd \_\_\_\_\_

3rd \_\_\_\_\_

4rd \_\_\_\_\_

5th \_\_\_\_\_

6th \_\_\_\_\_

7th \_\_\_\_\_

8th \_\_\_\_\_

9th \_\_\_\_\_

10th \_\_\_\_\_

11th \_\_\_\_\_

12th \_\_\_\_\_

Today is the \_\_\_\_\_ of \_\_\_\_\_

LO 4.2

**Table 1.56****1.10.7.1.1 A page from my calendar****1.10.7.1.1.1 MONTH**

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

**Table 1.57**

- Write the dates for this month above. Begin from 1.
- Complete:

The 1st of \_\_\_\_\_ is on a \_\_\_\_\_.  
 has \_\_\_\_\_ days.

There are \_\_\_\_\_ days from 5th to the 11th.

The 20th(twentieth) falls on a \_\_\_\_\_.

There are \_\_\_\_\_ Sundays in \_\_\_\_\_ (month)

LO 4.2		LO 4.3	
--------	--	--------	--

Table 1.58

sunny / yellow	cloudy/blue	rainy/red	windy/green
----------------	-------------	-----------	-------------

Table 1.59

- Collect the information for this month.

— (month)

Table 1.60

- Use the above information for your graph.

Table 1.61

- The \_\_\_\_\_ days were the most.
- The \_\_\_\_\_ days were the least.

LO 5.1	LO 5.4	LO 5.5
--------	--------	--------

Table 1.62

### 1.10.8 Assessment

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.2:** The learner will be able to name the days of the week and the months of the year;

**Assessment Standard 4.6:** The learner will be able to estimate, measure, compare and order three-dimensional objects using non-standard measures;

**Learning Outcome 5:** The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

**Assessment Standard 5.1:** We know this when the learner collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher (e.g. 'how many learners are there in each classroom?');

**Assessment Standard 5.2:** We know this when the learner sorts physical objects to one attribute chosen by the teacher;

**Assessment Standard 5.5:** We know this when the learner describes own or a peer's collection of objects, explains how it was sorted, and answers questions about it.

## 1.11 Grouping<sup>11</sup>

### 1.11.1 MATHEMATICS

### 1.11.2 Mathematics in the world around us

### 1.11.3 EDUCATOR SECTION

### 1.11.4 Memorandum

### 1.11.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- **Integration of Themes:** Friends
- **Social Justice:** Friends should spend time together, e.g. playing games. Discuss in small groups what your attitude towards your friends should be when you play together.
- **A healthy environment:** Why is sport important? Discuss the safety precautions needed when participating in sport at school.

---

<sup>11</sup>This content is available online at <<http://cnx.org/content/m32449/1.1/>>.

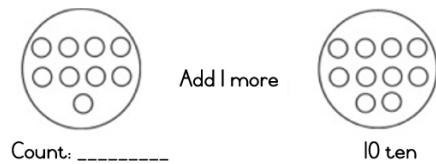
- **Inclusively:** Who should be allowed to participate in sport at school? Only team players? Or should the school accommodate everyone? Make your own graph of which learners participate in sport.
- Number concept is extended to 50.
- Counting in 2's, 3's, 4's, 5's and 10's.
- Calendar activities enable learners to order the months and revise ordinals.
- Graph – a weather graph can be completed.
- Bonds of 10 are introduced with many opportunities to reinforce these.
- Measurement activities involving comparisons of height, length, width using related vocabulary.
- Capacity – litre;
- Identifying coins and shapes are included.

### 1.11.6 LEARNER SECTION

#### 1.11.7 Content

##### 1.11.7.1 ACTIVITY: Grouping [LO 1.1, LO 1.2, LO 1.3, LO 1.4, LO 1.8, LO 1.9, LO 2.2]

###### 1.11.7.1.1 Ten to go!



**Figure 1.60**

---

- Look at ten. Write your own sums to make 10.

$$\begin{array}{r}
 \hline
 & = 10 \\
 \hline
 & = 10 \\
 & = 10 \\
 & = 10 \\
 & = 10 \\
 & = 10 \\
 & = 10 \\
 & = 10 \\
 & = 10 \\
 & = 10 \\
 & = 10
 \end{array}$$

- Circle and join the numbers that add up to 10.
- Complete the triangles.

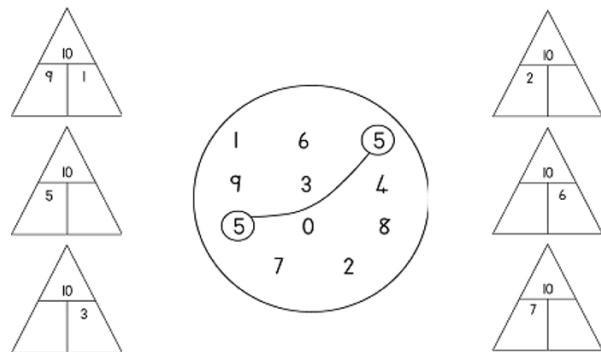


Figure 1.61

LO 1.9	
--------	--

Table 1.63

- Help Dad count 10 apples in a box. Group them.

		I group of ten	I	0	ten
	•	-- group of ten and 1 more			eleven
	• •	-- group of ten and ... more			twelve
	• • •	-- group of ten and ... more			thirteen
	• • • •	-- group of ten and ... more			fourteen
	• • • • •	-- group of ten and ... more			fifteen
	• • • • • •	-- group of ten and ... more			sixteen
	• • • • • • •	-- group of ten and ... more			seventeen
	• • • • • • • •	-- group of ten and ... more			eighteen
	• • • • • • • • •	-- group of ten and ... more			nineteen
	• • • • • • • • •	--- groups of ten			twenty

I will write the labels for the boxes.

<b>18</b> eighteen	<b>11</b> _____	<b>17</b> _____
<b>12</b> _____	<b>14</b> _____	<b>15</b> _____
<b>19</b> _____	<b>13</b> _____	<b>16</b> _____

Figure 1.62

LO 1.1	LO 1.3	
--------	--------	--

Table 1.64

#### 1.11.7.1.2 We play with sticks

- Guess how many sticks are in the box. \_\_\_\_\_ sticks.
- Count them. \_\_\_\_\_ sticks.
  
- Group the ten to make counting easier.
- Count the tens.

---

	I group of ten	I	0	ten
	-- groups of ten			--- twenty
	-- groups of ten			--- thirty
	-- groups of ten			--- forty
	-- groups of ten			--- fifty

**Figure 1.63**


---

- Count the tens.

10	.	.	.	.
----	---	---	---	---

**Table 1.65**

$$\begin{aligned}
 10 + 10 &= \text{-----} \\
 50 - 10 &= \text{-----} \\
 20 + 10 &= \text{-----} \\
 40 - 10 &= \text{-----} \\
 30 + 10 &= \text{-----} \\
 30 - 10 &= \text{-----}
 \end{aligned}$$

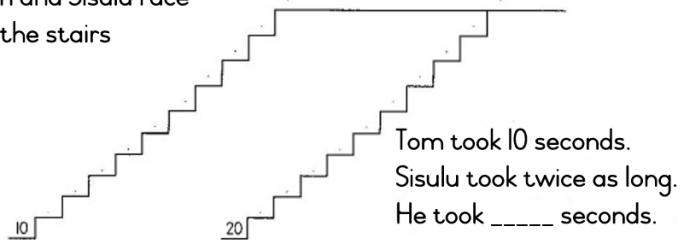
LO 1.2		LO 1.3		LO 1.8	
--------	--	--------	--	--------	--

**Table 1.66**

- Complete the patterns.

	$20 + 1 = 21$		$30 + 1 = 31$
	$20 + \underline{\hspace{1cm}} = 22$		$30 + 2 = 32$
	30		40

☺ Tom and Sisulu race  
up the stairs



☺ Arrange these numbers from least to most.

14.	10.	16.	9.	18.	20.
---	---	---	---	---	---
29.	24.	20.	27.	19.	25.
---	---	---	---	---	---

Figure 1.64

LO 1.4	LO 2.2	
--------	--------	--

Table 1.67

### 1.11.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.3 fives from any multiple of 5 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

- 1.4.1 whole numbers to at least 2-digit numbers;
- 1.4.2 common fractions including halves and quarters;

**Assesseringstandaard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

- 1.9.1 addition and subtraction for numbers to at least 20;
- 1.9.2 multiplication of whole numbers with solutions to at least 20.

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

## 1.12 Mass, doubling, halving<sup>12</sup>

### 1.12.1 MATHEMATICS

### 1.12.2 Mathematics in the world around us

### 1.12.3 EDUCATOR SECTION

### 1.12.4 Memorandum

### 1.12.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and
- develop entrepreneurial opportunities.

- **Integration of Themes:** Friends

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<sup>12</sup>This content is available online at <<http://cnx.org/content/m32450/1.1/>>.

- **Social Justice:** Friends should spend time together, e.g. playing games. Discuss in small groups what your attitude towards your friends should be when you play together.
- **A healthy environment:** Why is sport important? Discuss the safety precautions needed when participating in sport at school.
- **Inclusively:** Who should be allowed to participate in sport at school? Only team players? Or should the school accommodate everyone? Make your own graph of which learners participate in sport.
- Number concept is extended to 50.
- Counting in 2's, 3's, 4's, 5's and 10's.
- Calendar activities enable learners to order the months and revise ordinals.
- Graph – a weather graph can be completed.
- Bonds of 10 are introduced with many opportunities to reinforce these.
- Measurement activities involving comparisons of height, length, width using related vocabulary.
- Capacity – litre;
- Identifying coins and shapes are included.

### 1.12.6 LEARNER SECTION

#### 1.12.7 Content

##### 1.12.7.1 ACTIVITY: Mass, Doubling, Halving [LO 1.1, LO 1.3, LO 1.9, LO 1.10, LO 2.2, LO 4.6]

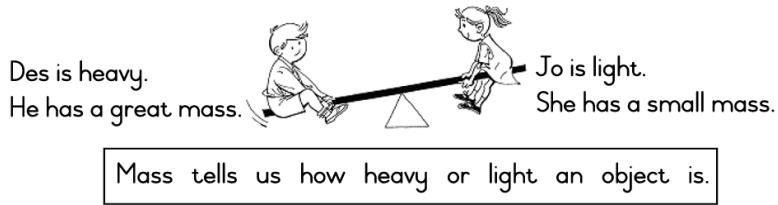


Figure 1.65

- Work in four groups:

You need: a wooden block, a large stone, a shoe, a book and a lunch box.

Group 1:

Compare the mass of the 5 objects by estimating.

Arrange them from the lightest to the heaviest.

Group 2:

Compare their mass. Use a balance scale.

Arrange them from the lightest to the heaviest.

Group 3:

Compare their mass by estimating.

Arrange them from the heaviest to the lightest.

Group 4:

Compare their mass. Use a balance scale.

Arrange them from the heaviest to the lightest.

LO 4.6	<input type="text"/>
--------	----------------------

**Table 1.68**

- Think of three different ways to double 6.
- I decided \_\_\_\_\_ was the best way.

- Double 7 in three different ways:
- Double 8 in any way.
- Double 9 in any way.

- Double these numbers:

4 \_\_\_\_\_ ; 7 \_\_\_\_\_ ; 9 \_\_\_\_\_ ; 8 \_\_\_\_\_ ; 6 \_\_\_\_\_

LO 1.10	<input type="text"/>
---------	----------------------

**Table 1.69**

#### 1.12.7.1.1 “ Flip the Coin ”

1				5				
								20
	22							
					38			
								50

**Table 1.70**

- Fill in the missing numbers on the block.
- Count to 20 and back to 0.
  - Count to 30 and back to 0.
  - Count to 40 and back to 0.
  - Count to 50 and back to 0.
- Choose a friend. Take turns to flip the coin on the block. Read the number it lands on.
- Complete these patterns. The number block will help you.

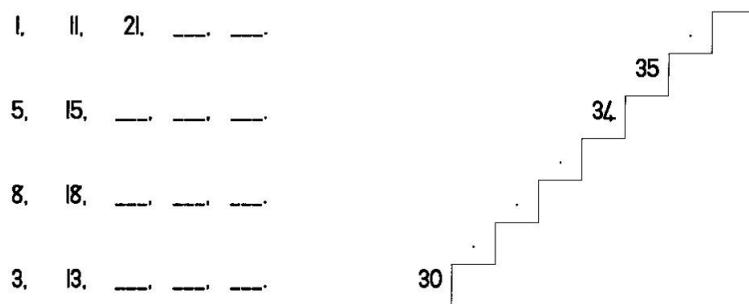
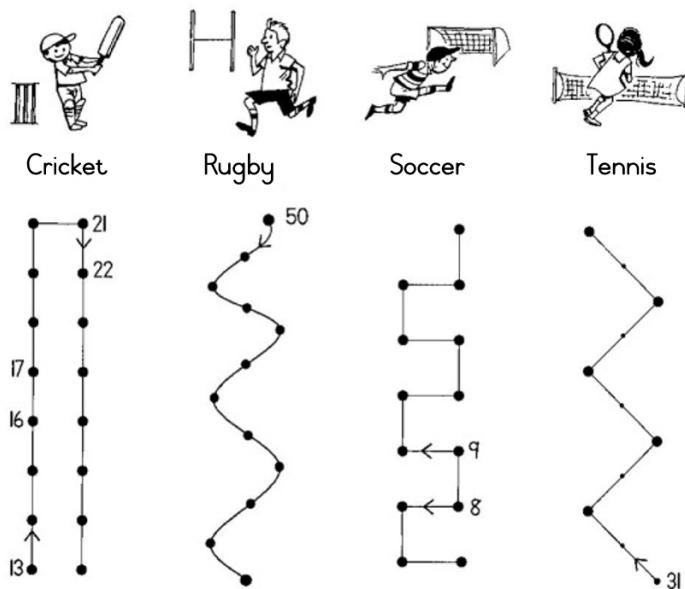


Figure 1.66

LO 1.1		LO 1.3		LO 2.2	
--------	--	--------	--	--------	--

Table 1.71

### 1.12.7.1.2 We play .....



☺ Complete the tracks.

#### Double

10	---
6	---
9	---
20	---
8	---
30	---
7	---

#### Halve

20	---	30	---
12	---	49	---
18	---	16	---
40	---	28	---
16	---	11	---
60	---	29	---
14	---	17	---

Figure 1.67

LO 1.10	LO 2.2	
---------	--------	--

Table 1.72

### 1.12.7.1.3 What fun we had!

- Mike made 8 runs in a cricket match.
- Henry made twice as many. How many runs did Henry make?

Henry made \_\_\_\_\_ runs.

Write the number sentence;  $8 + \text{_____} = \text{_____}$ .

- Our team scored 10 points in rugby.

- The blue team scored 7 points less. How many points did the blue team score?

They scored \_\_\_\_\_ points.

Write the number sentence; \_\_\_\_\_.

- Sally played 5 games of tennis on Monday, 5 on Tuesday and 5 on Wednesday. How many games did she play altogether?

She played \_\_\_\_\_ games of tennis.

Write the number sentence; \_\_\_\_\_.

- Anne's netball team scored 16 goals. Pat's team only scored half as many.

Pat's team scored \_\_\_\_\_ goals.

- The 'A' soccer team beat the 'B' soccer team with 1 goal. If the 'A' team scored 19 goals, how many goals did the 'B' soccer team score?

The 'B' soccer scored \_\_\_\_\_ goals.

Write the number sentence \_\_\_\_\_.

LO 1.9	
--------	--

**Table 1.73**

### 1.12.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

1.9.2 multiplication of whole numbers with solutions to at least 20.

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

1.10.1 building up and breaking down numbers;

1.10.2 doubling and halving;

1.10.3 using concrete apparatus (e.g. counters);

1.10.4 number-lines;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.6:** We know this when the learner estimates, measures, compares and orders three-dimensional objects using non-standard measures.

## 1.13 Measure<sup>13</sup>

### 1.13.1 MATHEMATICS

#### 1.13.2 Mathematics in the world around us

#### 1.13.3 EDUCATOR SECTION

#### 1.13.4 Memorandum

#### 1.13.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

- **Integration of Themes:** Friends
- **Social Justice:** Friends should spend time together, e.g. playing games. Discuss in small groups what your attitude towards your friends should be when you play together.
- **A healthy environment:** Why is sport important? Discuss the safety precautions needed when participating in sport at school.
- **Inclusively:** Who should be allowed to participate in sport at school? Only team players? Or should the school accommodate everyone? Make your own graph of which learners participate in sport.
  
- Number concept is extended to 50.
- Counting in 2's, 3's, 4's, 5's and 10's.
- Calendar activities enable learners to order the months and revise ordinals.
- Graph – a weather graph can be completed.
- Bonds of 10 are introduced with many opportunities to reinforce these.
- Measurement activities involving comparisons of height, length, width using related vocabulary.
- Capacity – litre;
- Identifying coins and shapes are included.

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<sup>13</sup>This content is available online at <<http://cnx.org/content/m32459/1.1/>>.

### 1.13.6 LEANER SECTION

#### 1.13.7 Content

##### 1.13.7.1 ACTIVITY: Measure [LO 1.8, LO 1.9, LO 1.10, LO 4.6, LO 4.7]



**Figure 1.68**

Mamma skink 4 koppies melk van 1 liter.

Sy skink 3 glase melk van 1 liter.

- She will need \_\_\_\_\_ litres for 8 cups of milk.
- She will need \_\_\_\_\_ litres for 9 glasses.
- Show how you found out:
- Des drinks 16 cups of milk a week.
- His mom will have to buy \_\_\_\_\_ litres of milk.
- Show how you found out:
- Look through a catalogue and find other things we buy by the litre. Paste them at the back of this page.

LO 4.7	
--------	--

**Table 1.74**

Mom bakes muffins for breakfast.

She puts 5 muffins in a pan.

- Complete:

Pan/pans	1	2	3	4	5	6	7	8	9	10
muffins	5	10								

**Table 1.75**

- How many pans must she bake to have 40 muffins?

\_\_\_\_\_ pans

- How many muffins will she have if she bakes 3 pans?

\_\_\_\_\_ muffins

- Mom shares out 10 muffins between 2 children. Each will get \_\_\_\_\_ muffins.
- Mom has 12 muffins on the plate. She gives half to Granny. Granny will get \_\_\_\_\_ muffins.
- Mom cools 8 muffins on one tray. She can cool \_\_\_\_\_ muffins on two trays.
- Double these numbers:

6 \_\_\_\_\_  
 20 \_\_\_\_\_  
 8 \_\_\_\_\_  
 5 \_\_\_\_\_  
 7 \_\_\_\_\_  
 4 \_\_\_\_\_  
 9 \_\_\_\_\_  
 10 \_\_\_\_\_  
 30 \_\_\_\_\_

LO 1.8	LO 1.9	LO 1.10	
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Table 1.76

#### 1.13.7.1.1 We can measure

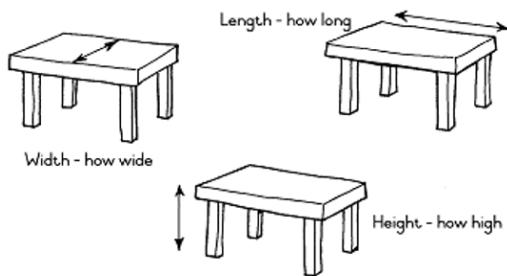


Figure 1.69

- I can measure the length, the width and the height of my table, the windowsill, the mat and my chair with things like:



Figure 1.70

- To measure the length of my table I would use \_\_\_\_\_.

I guess it will measure about \_\_\_\_\_.

I measured the length of my table. It is \_\_\_\_\_.

- To measure the width of my book I would use \_\_\_\_\_.

I guess it will measure about \_\_\_\_\_.

I measured the width of my book. It is \_\_\_\_\_.

LO 4.6	<input type="text"/>
--------	----------------------

Table 1.77

### 1.13.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assesseringstandaard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

1.9.2 multiplication of whole numbers with solutions to at least 20.

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

1.10.1 building up and breaking down numbers;

1.10.2 doubling and halving;

1.10.3 using concrete apparatus (e.g. counters);

1.10.4 number-lines;

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.6:** We know this when the learner estimates, measures, compares and orders three-dimensional objects using non-standard measures.

**Assessment Standard 4.7:** We know this when the learner works with standard measures.

## 1.14 Money<sup>14</sup>

### 1.14.1 MATHEMATICS

#### 1.14.2 Mathematics in the world around us

#### 1.14.3 EDUCATOR SECTION

#### 1.14.4 Memorandum

#### 1.14.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
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- **Integration of Themes:** Friends
- **Social Justice:** Friends should spend time together, e.g. playing games. Discuss in small groups what your attitude towards your friends should be when you play together.
- **A healthy environment:** Why is sport important? Discuss the safety precautions needed when participating in sport at school.
- **Inclusively:** Who should be allowed to participate in sport at school? Only team players? Or should the school accommodate everyone? Make your own graph of which learners participate in sport.
  
- Number concept is extended to 50.
- Counting in 2's, 3's, 4's, 5's and 10's.
- Calendar activities enable learners to order the months and revise ordinals.
- Graph – a weather graph can be completed.
- Bonds of 10 are introduced with many opportunities to reinforce these.
- Measurement activities involving comparisons of height, length, width using related vocabulary.
- Capacity – litre;
- Identifying coins and shapes are included.

### 1.14.6 LEARNER SECTION

#### 1.14.7 Content

##### 1.14.7.1 ACTIVITY: Money [LO 1.1, LO 1.4, LO 1.6, LO 1.9, LO 2.2, LO 3.1]

- My friends and I have saved our money.

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<sup>14</sup>This content is available online at <<http://cnx.org/content/m32507/1.1/>>.

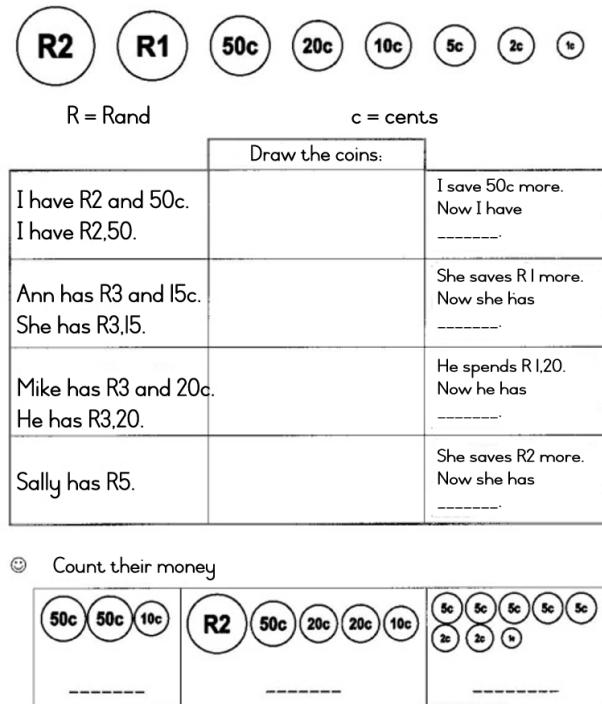


Figure 1.71

LO 1.6	
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Table 1.78

**1.14.7.1.1 We visit the tuck shop:**

Sweets 50c  
 Hotdogs R2  
 Chips 50c  
 Cool drink R1  
 Ice Cream R2

- Sisulu has R5. He buys a hotdog and a cool drink. He spends \_\_\_\_\_. He has \_\_\_\_\_ left.
- Draw the money he has left.
- Tom has R10. He buys 2 hotdogs, 2 cool drinks and 2 ice creams. He spends \_\_\_\_\_. He has \_\_\_\_\_ left.
- Draw the money he had.
- Mo buys 2 packets of sweets and 2 packets of chips for his friends. He has spent all his money. How much money did he have to spend?

- Draw the money he had.

- 4 boys: each buys 2 hotdogs.

They buy \_\_\_\_\_ hotdogs.

They pay \_\_\_\_\_ altogether.

- 3 girls: each buys 3 packets of sweets.

They buy \_\_\_\_\_ packets of sweets.

They pay \_\_\_\_\_ altogether.

- 5 hotdogs: each has 1 sausage.

Mom needs \_\_\_\_\_ sausages for 10 hotdogs.

I pay R \_\_\_\_\_ for 5 hotdogs.

I pay R \_\_\_\_\_ for 10 hotdogs.

Try these:

Chips:	1	2	3	4	5	6	7	8	9	10
Money:	50c	R1								

Table 1.79



Easy



Not too easy!



Too hard!

Figure 1.72

Choose one to colour.

LO 1.6	
--------	--

Table 1.80



I can count!

<input type="radio"/> 11.	12.	---	---	---	---	---	---	---	19.
<input type="radio"/> 30.	31.	---	---	---	---	---	---	---	---
<input type="radio"/> 49.	48.	---	---	---	---	---	---	---	---
<input type="radio"/> 6.	8.	---	---	---	---	---	---	---	
<input type="radio"/> 3.	6.	---	---	---	---	---	---	---	
<input type="radio"/> 4.	8.	---	---	---	---	---	---	---	
<input type="radio"/> 5.	10.	---	---	---	---	---	---	---	
<input type="radio"/> 25.	30.	---	---	---	---	---	---	---	
<input type="radio"/> 10.	9.	---	---	---	---	---	---	---	
<input type="radio"/> 14.	12.	---	---	---	---	---	---	---	

Before and after?		Between?	
---	29	19	21
---	18	37	39
---	11	48	50
---	41	13	15

Figure 1.73

- Write their names:

11                    13                    17                    8  
 14                    10                    19                    12  
 18                    16                    15                    20

LO 1.4	LO 2.2	
--------	--------	--

Table 1.81

- Say the answers to a friend, to Mummy or Daddy.

10 + 1 =	14 + 1 =	16 + 1 =	11 + 1 =
10 + 2 =	14 + 2 =	16 + 2 =	11 + 2 =
10 + 3 =	14 + 3 =	16 + 3 =	11 + 3 =

Table 1.82

$11 - 1 =$	$15 - 1 =$	$18 - 1 =$	$10 - 1 =$
$11 - 2 =$	$15 - 2 =$	$18 - 2 =$	$10 - 2 =$
$11 - 3 =$	$15 - 3 =$	$18 - 3 =$	$10 - 3 =$

**Table 1.83**

$12 + 1 =$	$17 + 1 =$	$13 + 1 =$	$15 + 1 =$
$12 + 2 =$	$17 + 2 =$	$13 + 2 =$	$15 + 2 =$
$12 + 3 =$	$17 + 3 =$	$13 + 3 =$	$15 + 3 =$

**Table 1.84**

$19 - 1 =$	$9 - 1 =$	$14 - 1 =$	$17 - 1 =$
$19 - 2 =$	$9 - 2 =$	$14 - 2 =$	$17 - 2 =$
$19 - 3 =$	$9 - 3 =$	$14 - 3 =$	$17 - 3 =$

**Table 1.85**

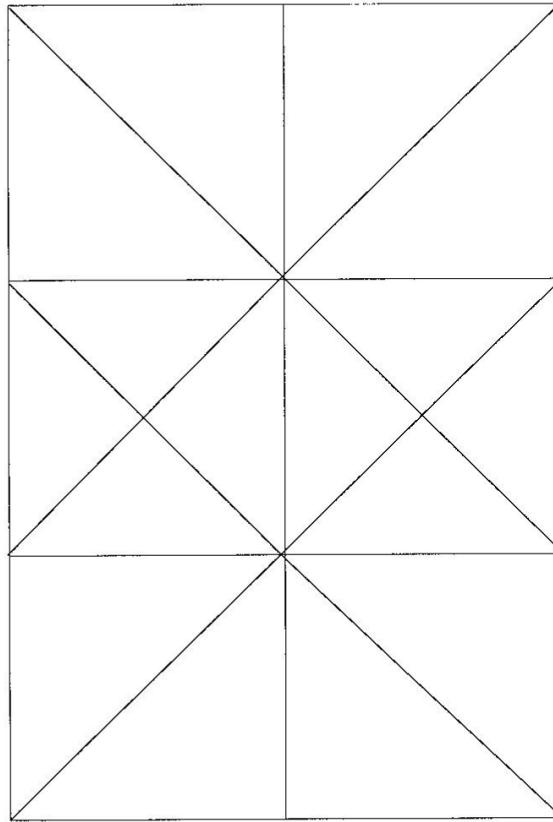
$8 + \underline{\quad} = 10$	$5 + \underline{\quad} = 10$	$10 - 7 =$	$10 - 4 =$
$6 + \underline{\quad} = 10$	$7 + \underline{\quad} = 10$	$10 - 5 =$	$10 - 2 =$
$2 + \underline{\quad} = 10$	$4 + \underline{\quad} = 10$	$10 - 6 =$	$10 - 9 =$

**Table 1.86**

LO 1.9	<input type="text"/>
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**Table 1.87****1.14.7.1.2 Mathematics and shapes:**

- Count all the triangles.  triangles.

**Figure 1.74**


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- Count all the squares. \_\_\_\_\_ squares.
- Count all the rectangles. \_\_\_\_\_ rectangles.
- Look at the pattern from all the sides.

LO 1.1	LO 3.1	
--------	--------	--

**Table 1.88**

#### 1.14.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

1.4.1 whole numbers to at least 2-digit numbers;

1.4.2 common fractions including halves and quarters;

**Assessment Standard 1.6:** We know this when the learner solves money problems involving totals and change in rand and cents;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

1.9.2 multiplication of whole numbers with solutions to at least 20.

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.1:** We know this when the learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the school environment and in pictures.



# Chapter 2

## Term 2

### 2.1 Number sentences<sup>1</sup>

#### 2.1.1 MATHEMATICS

#### 2.1.2 Mathematics in the world around us

#### 2.1.3 EDUCATOR SECTION

#### 2.1.4 Memorandum

#### 2.1.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- **Integration of Themes:** Friends
- **Social Justice, Human Rights and a healthy environment:** “I am in Grade 2 with many other children. Each learner needs to be happy. The educator needs a suitable learning environment in order to teach us.”
- Discuss the learner’s responsibility to create such an environment.
- Taking turns on the jungle gym is important – why? Discuss safety, manners, co-operation, etc.
- Learners extend their number concept to 109 on the “jungle gym”. The activities include ordinals, names, symbols and counting forward and backward.
- Position is established by places in the classroom, using a floor map of the room.

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m32462/1.1/>>.

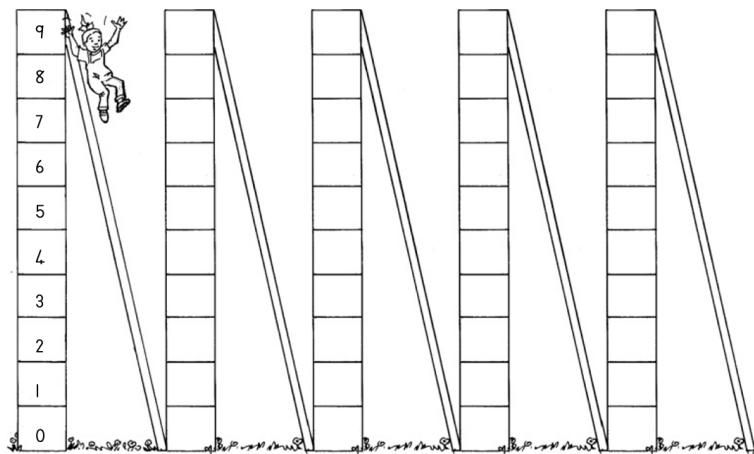
- A graph is designed to be completed by collecting information.
- Addition and subtraction are extended to  $+4, -4, +5, -5, +6, -6, +7, -7$ .
- Bonds of 10 and 11 are discovered.
- Directions are given to draw and colour a shape.
- Measuring with thumbs and comparison of these measurements using the related vocabulary.

### 2.1.6 LEARNER SECTION

#### 2.1.7 Content

##### 2.1.7.1 ACTIVITY: Number sentence [LO 1.1, LO 1.2, LO 1.4, LO 2.2]

- Slips and slides on the jungle gym.
- Fill in the numbers as you climb the steps and slide down the slides.



**Figure 2.1**

LO 1.1	LO 2.2	
--------	--------	--

**Table 2.1**

- Fun with numbers on the Jungle Gym.
- Count to a friend.

2. Count all the numbers from  $0 \rightarrow 59$  on the Jungle Gym.  
 3. Begin from 0, count in 2's to 58.

- These are the \_\_\_\_\_ numbers (even, uneven)

1. Begin at 58. Count back in 2's to 0.  
 2. Begin from 1, count in 2's to 59.

- These are the \_\_\_\_\_ numbers (even, uneven)

  1. Begin from 59. Count back in 2's to 1.
  2. Begin from 0. Count in 3's to 30.

- Write them:

0, 3, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, 30  
 1. Begin from 30. Count back in 3's to 0.

- Begin from 30. Count back in 3's to 0.

30, 27, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, 0  
 2. Tel in 10 'e tot by 100.

- Write them:

10, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, 100

LO 1.2	
--------	--

**Table 2.2**

- Which number comes between \_\_\_\_\_?

---

16	___	18	8	___	10
24	___	26	44	___	46
31	___	33	27	___	29
48	___	50	1	___	3
39	___	41	30	___	32

---

**Figure 2.2**

- Write their names:

27	<u>twenty seven</u>	16	_____
34	_____	11	_____
40	_____	54	_____
29	_____	35	_____
58	_____	50	_____

**Figure 2.3**

- Count in 10's:

2,    12,    ..... , ..... , ..... , 52  
 6,    16,    ..... , ..... , ..... , 56  
 8,    18,    ..... , ..... , ..... , 58

**Figure 2.4**

- Divide into four groups.

Group 1	Group 2
<ul style="list-style-type: none"> <li>• Discuss what is the same about 14 and 41.</li> <li>• Discuss what is different about 14 and 41.</li> <li>• Draw and group the tens.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss what is the same about 23 and 32.</li> <li>• Discuss what is different about 23 and 32.</li> <li>• Draw and group the tens.</li> </ul>
14	23
41	32
<ul style="list-style-type: none"> <li>• Write their names.</li> </ul>	<ul style="list-style-type: none"> <li>• Write their names.</li> </ul>
<i>continued on next page</i>	

14	23
41	32
<ul style="list-style-type: none"> <li>• Which number comes before 14? .....</li> <li>• Which number comes before 41? .....</li> <li>• Which number comes after 14? .....</li> <li>• Which number comes after 41? .....</li> </ul>	<ul style="list-style-type: none"> <li>• Which number comes before 23? .....</li> <li>• Which number comes before 32? .....</li> <li>• Which number comes after 23? .....</li> <li>• Which number comes after 32? .....</li> </ul>
<ul style="list-style-type: none"> <li>• Report back to class.</li> </ul>	<ul style="list-style-type: none"> <li>• Report back to class.</li> </ul>

**Table 2.3**

LO 1.4	
--------	--

**Table 2.4**

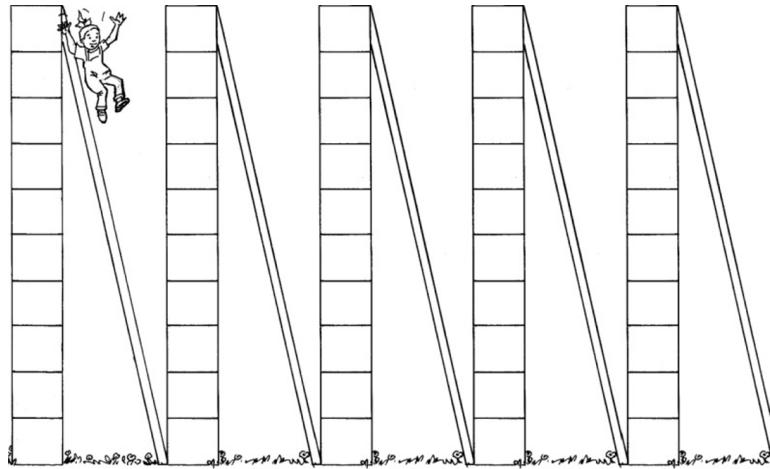
Group 3	Group 4
<ul style="list-style-type: none"> <li>Discuss what is the same about 11 and 31.</li> <li>Discuss what is different about 11 and 31.</li> <li>Draw and group the tens.</li> </ul>	<ul style="list-style-type: none"> <li>Discuss what is the same about 31 and 43.</li> <li>Discuss what is different about 31 and 43.</li> <li>Draw and group the tens.</li> </ul>
11	31
31	43
<ul style="list-style-type: none"> <li>Write their names.</li> </ul>	<ul style="list-style-type: none"> <li>Write their names.</li> </ul>
11	31
31	43
<ul style="list-style-type: none"> <li>Which number comes before 11? .....</li> <li>Which number comes before 31? .....</li> <li>Which number comes after 11? .....</li> <li>Which number comes after 31? .....</li> </ul>	<ul style="list-style-type: none"> <li>Which number comes before 31? .....</li> <li>Which number comes before 43? .....</li> <li>Which number comes after 31? .....</li> <li>Which number comes after 43? .....</li> </ul>
<ul style="list-style-type: none"> <li>Report back to class.</li> </ul>	<ul style="list-style-type: none"> <li>Report back to class.</li> </ul>

**Table 2.5**

LO 1.4	
--------	--

**Table 2.6**

- We're on the slips and slides again.

**Figure 2.5**

LO 1.1	LO 2.2	
--------	--------	--

**Table 2.7**

- Count to one another.

1. Count all the numbers from  $60 \rightarrow 109$  on the Jungle Gym.  
2. Begin from 60, count in 2's to 108.
- These are the \_\_\_\_\_ numbers (even, uneven)
3. Begin at 108. Count back in 2's to 60.  
4. Begin from 61, count in 2's to 109.
- These are the \_\_\_\_\_ numbers (even, uneven)
5. Begin from 109. Count back in 2's to 1.  
6. Begin from 60. Count in 3's to 90.
- Write them:  
  
60, 63, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, 90  
7. Begin from 90. Count back in 3's to 60.
- Write them:  
  
90, 87, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, \_\_\_, 0  
8. Count back in 10's from 100 to 0.
- Write them:

100, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, \_\_, 0

LO 1.2	
--------	--

**Table 2.8**

- Which number comes between \_\_\_\_\_?

64	___	66	69	___	71
78	___	80	81	___	83
81	___	83	85	___	87
96	___	98	90	___	92
72	___	74	79	___	81

**Figure 2.6**

- Write their names:

64	sixty four	73	_____
80	_____	89	_____
96	_____	90	_____
85	_____	92	_____
100	_____	63	_____

**Figure 2.7**

- Count in 10's:

---

61,	71,	.....,	.....,	101
63,	73,	.....,	.....,	103
69,	79,	.....,	.....,	109

**Figure 2.8**

### 2.1.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.3 fives from any multiple of 5 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

- 1.4.1 whole numbers to at least 2-digit numbers;
- 1.4.2 common fractions including halves and quarters;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

## 2.2 Establishing position in the classroom<sup>2</sup>

### 2.2.1 MATHEMATICS

#### 2.2.2 Mathematics in the world around us

#### 2.2.3 EDUCATOR SECTION

#### 2.2.4 Memorandum

#### 2.2.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;

<sup>2</sup>This content is available online at <<http://cnx.org/content/m32441/1.1/>>.

5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- **Integration of Themes:** Friends
- **Social Justice, Human Rights and a healthy environment:** “I am in Grade 2 with many other children. Each learner needs to be happy. The educator needs a suitable learning environment in order to teach us.”
- Discuss the learner’s responsibility to create such an environment.
- Taking turns on the jungle gym is important – why? Discuss safety, manners, co-operation, etc.
- Learners extend their number concept to 109 on the “jungle gym”. The activities include ordinals, names, symbols and counting forward and backward.
- Position is established by places in the classroom, using a floor map of the room.
- A graph is designed to be completed by collecting information.
- Addition and subtraction are extended to  $+4, -4, +5, -5, +6, -6, +7, -7$ .
- Bonds of 10 and 11 are discovered.
- Directions are given to draw and colour a shape.
- Measuring with thumbs and comparison of these measurements using the related vocabulary.

## 2.2.6 LEARNER SECTION

### 2.2.7 Content

#### 2.2.7.1 ACTIVITY: Establishing position in the classroom [LO 1.2, LO 1.9, LO 2.2, LO 3.5, LO 3.6, LO 3.7, LO 3.8, LO 4.6]

- This is my classroom

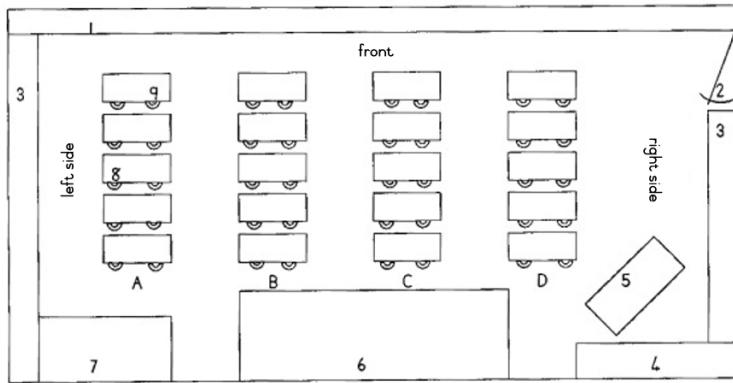


Figure 2.9

- Study the map of the classroom.
- Make sure you know where everything is.

1. \_\_\_\_\_ is the blackboard. Colour it.
2. \_\_\_\_\_ is the door. Colour it.
3. \_\_\_\_\_ is the windows. Colour them.
4. \_\_\_\_\_ is the cupboards. Colour it.
5. \_\_\_\_\_ is the teacher's table. Colour it.
6. \_\_\_\_\_ is the mat. Colour it.
7. \_\_\_\_\_ is the reading corner. Colour it.
8. \_\_\_\_\_ is my desk. Colour it.
9. \_\_\_\_\_ is Henry's desk. Colour it.

- A is the row that I sit in.
- Where is the front of the class?
- Where is the back of the class?
- Which is the left side?
- Which is the right side?

LO 3.5		LO 3.6		LO 3.7		LO 3.8	
--------	--	--------	--	--------	--	--------	--

Table 2.9

- Complete:
- How many pupils do you think are in my Grade 2 class? Guess first.
- Write:

I guessed \_\_\_\_\_ pupils.

Count the pupils in 2's.

I counted \_\_\_\_\_ pupils.

- Tick that fits.

I guessed correctly.

I guessed too many.

I guessed too few.

- Use counters or drawings if you need to find out the answers.

Use counters or drawings if you need to find out the answers.

2 boys will have \_\_\_\_\_ eyes.

3 boys will have \_\_\_\_\_ eyes.

4 boys will have \_\_\_\_\_ eyes.

5 boys will have \_\_\_\_\_ eyes.

If 1 girl has 2 ears,

2 girls will have \_\_\_\_\_ ears.

3 girls will have \_\_\_\_\_ ears.

4 girls will have \_\_\_\_\_ ears.

5 girls will have \_\_\_\_\_ ears.

- Complete:

2, 4, 6, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, 26.

LO 1.2		LO 1.9		LO 2.2	
--------	--	--------	--	--------	--

Table 2.10

#### 2.2.7.1.1 In my classroom

- Complete:

- I sit in row \_\_\_\_\_. (B or A)
- My desk is on the \_\_\_\_\_ side of the room. (right, left)
- The reading corner is \_\_\_\_\_ of the room. (at the back, in the front)
- I must fetch the books in the cupboard \_\_\_\_\_ of the room. (at the back, in the front)
- My teacher's table is on the \_\_\_\_\_ side of the room. (right, left)
- My teacher's table is on the \_\_\_\_\_ side of the room. (right, left)
- My desk is the \_\_\_\_\_ desk from the front. (first, third)
- Henry's desk is the \_\_\_\_\_ desk from the front. (first, third)
- The door is on the \_\_\_\_\_ side of the room. (right, left)

- Colour each pencil a different colour.

- Complete:



Figure 2.10

LO 3.5	LO 3.8	
--------	--------	--

**Table 2.11****2.2.7.1.2 I measure with my thumb**

- Can you?
- Measure the lengths of the following objects on your map. Use your thumb.
- Complete....

1. The length of the cupboard is the same as \_\_\_\_\_ thumbs.
2. The length of the board is the same as \_\_\_\_\_ thumbs.
3. The length of the board is the same as \_\_\_\_\_ thumbs.
4. The length of the windows (right side) is the same as \_\_\_\_\_ thumbs.
5. The length of the windows (left side) is the same as \_\_\_\_\_ thumbs.
6. The length of the reading corner is the same as \_\_\_\_\_ thumbs.
7. The distance from my table to the board is the same as \_\_\_\_\_ thumbs.
8. The distance from my table to the back wall is the same as \_\_\_\_\_ thumbs.

LO 4.6	
--------	--

**Table 2.12****2.2.8 Assessment**

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.3 fives from any multiple of 5 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.5:** We know this when the learner recognises three-dimensional objects from different positions;

**Assessment Standard 3.6:** We know this when the learner positions self within the classroom or three-dimensional objects in relation to each other;

**Assessment Standard 3.7:** We know this when the learner describes positional relationships (alone and/or as a member of a group or team) between three-dimensional objects or self and a peer;

**Assessment Standard 3.8:** We know this when the learner understands direction.

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.6:** We know this when the learner estimates, measures, compares and orders three-dimensional objects using non-standard measures.

## 2.3 Graphs, adding and subtracting<sup>3</sup>

### 2.3.1 MATHEMATICS

#### 2.3.2 Mathematics in the world around us

#### 2.3.3 EDUCATOR SECTION

#### 2.3.4 Memorandum

#### 2.3.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

- **Integration of Themes:** Friends
- **Social Justice, Human Rights and a healthy environment:** “I am in Grade 2 with many other children. Each learner needs to be happy. The educator needs a suitable learning environment in order to teach us.”
- Discuss the learner’s responsibility to create such an environment.
- Taking turns on the jungle gym is important – why? Discuss safety, manners, co-operation, etc.
- Learners extend their number concept to 109 on the “jungle gym”. The activities include ordinals, names, symbols and counting forward and backward.
- Position is established by places in the classroom, using a floor map of the room.
- A graph is designed to be completed by collecting information.
- Addition and subtraction are extended to +4, -4, +5, -5, +6, -6, +7, -7.
- Bonds of 10 and 11 are discovered.
- Directions are given to draw and colour a shape.
- Measuring with thumbs and comparison of these measurements using the related vocabulary.

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<sup>3</sup>This content is available online at <<http://cnx.org/content/m32442/1.1/>>.

### 2.3.6 LEANER SECTION

#### 2.3.7 Content

##### 2.3.7.1 ACTIVITY: Graphs, Adding and Subtracting [LO 1.2, LO 1.4, LO 1.8, LO 1.10, LO 2.2, LO 5.1, LO 5.2, LO 5.4, LO 5.5]

###### 2.3.7.2 I need to make a graph

The graph will help me find out ...

- which is the longest.
- which is the shortest.
- which is the furthest.
- which is the nearest.

- For each thumb you counted, colour one block.

My graph on lengths

The length of ...

the cupboard											
the board											
the mat											
the windows (right)											
the windows (left)											
the reading corner											

Table 2.13

- Now I can see.....

1. The \_\_\_\_\_ is the longest.
2. The \_\_\_\_\_ is the shortest.
3. The length of the cupboard is \_\_\_\_\_ than the length of the mat. (longer, shorter)
4. The length of the board is \_\_\_\_\_ than the windows on the left. (longer, shorter)

LO 5.1		LO 5.2		LO 5.4		LO 5.5	
--------	--	--------	--	--------	--	--------	--

Table 2.14

###### 2.3.7.3 Play with numbers

- Begin from 1. Draw a line from 1 to 2, from 2 to 3, etc, until you get to 40.

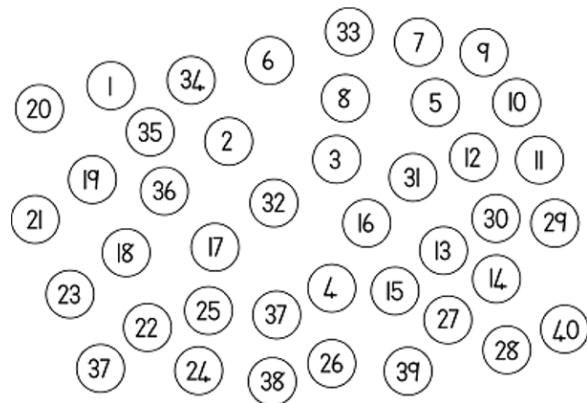


Figure 2.11

- Make each number one more and one less.

---

<u>15</u>	<u>16</u>	<u>17</u>	—	<u>49</u>	—
—	34	—	—	58	—
—	40	—	—	75	—
—	51	—	—	88	—
—	28	—	—	94	—
—	19	—	—	90	—

Figure 2.12

---

LO 1.2		LO 1.4	
--------	--	--------	--

Table 2.15

	+ 1	+ 3	- 1	+ 4	- 2	+ 10
30						
28						
37						
21						
19						

**Table 2.16**

	- 2	- 1	+ 3	+ 1	+ 2	- 10
32						
44						
35						
40						
47						

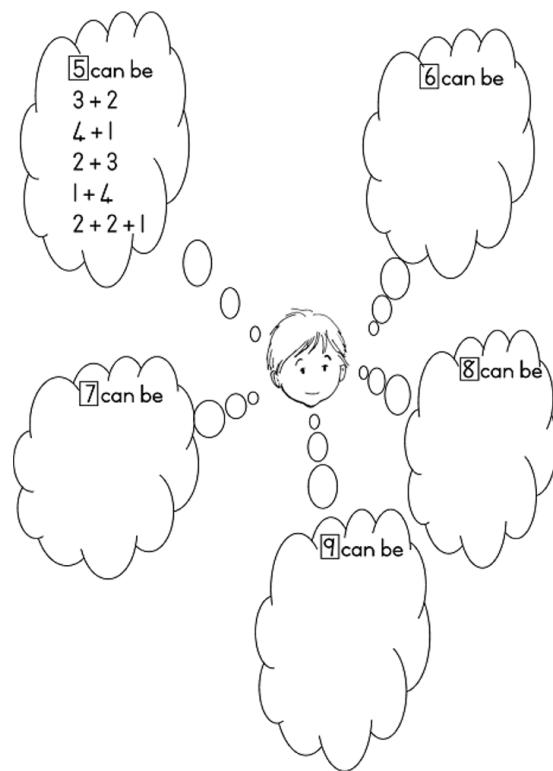
**Table 2.17**

LO 1.8	
--------	--

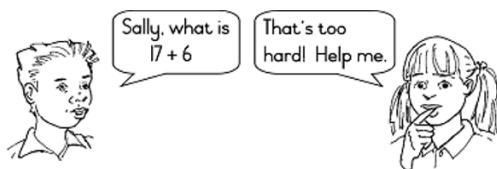
**Table 2.18**

#### 2.3.7.4 Rename numbers

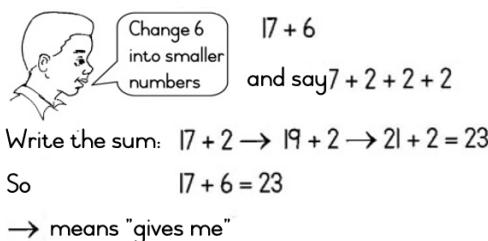
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**Figure 2.13**

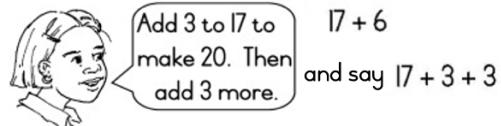
LO 1.10	
---------	--

**Table 2.19****Figure 2.14**

- Can you show Sally different ways in which she can make her sum easier? Write or draw them here.
- Des has a plan.

**Figure 2.15**

- Liz has another plan.



Write the sum:  $17 + 3 \rightarrow 20 + 3 = 23$   
So  $17 + 6 = 23$

**Figure 2.16**

---

LO 1.8	<input type="text"/>
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**Table 2.20**

- Let's use the plan Des had.
- Use smaller numbers for the ones in circles.
- Rename them.
- Use arrows to say "gives me".

1.  $14 + \textcircled{5} = \boxed{\phantom{0}}$

$$14 + 3 + 2 = \boxed{\phantom{0}}$$

$$14 + 3 \rightarrow \underline{\quad} + 2 = \underline{\quad}$$

So:  $14 + 5 = \underline{\quad}$

2.  $15 + \textcircled{6} = \boxed{\phantom{0}}$

$$15 + \underline{\quad} + \underline{\quad}$$

$$15 + \underline{\quad} \rightarrow \underline{\quad} + \underline{\quad} = \underline{\quad}$$

So:  $15 + 6 = \underline{\quad}$

3.  $16 + \textcircled{5} = \boxed{\phantom{0}}$

$$16 + \underline{\quad} + \underline{\quad} + \underline{\quad}$$

$$16 + \underline{\quad} \rightarrow \underline{\quad} + \underline{\quad} \rightarrow \underline{\quad} + \underline{\quad} = \underline{\quad}$$

So:  $16 + 5 = \underline{\quad}$

☺ Complete

$$14, 16, \underline{\quad}, \underline{\quad}, \underline{\quad}, \underline{\quad}, \underline{\quad}, \underline{\quad}, 30.$$

Figure 2.17

LO 1.8	LO 2.2	
--------	--------	--

Table 2.21

- Do these sums in the same way by renaming the number in the circle.

---

I.  $22 + \textcircled{6} = \square$   
 $22 + \underline{\quad} + \underline{\quad}$   
 $22 + \underline{\quad} \rightarrow \underline{\quad} + \underline{\quad} = \underline{\quad}$   
So:  $22 + 6 = \underline{\quad}$

2.  $25 + \textcircled{7} = \square$   
 $25 + \underline{\quad} + \underline{\quad} = \square$   
 $25 + \underline{\quad} \rightarrow \underline{\quad} + \underline{\quad} = \underline{\quad}$   
So:  $25 + 7 = \underline{\quad}$

3.  $21 + \textcircled{8} = \square$   
 $21 + \underline{\quad} + \underline{\quad} + \underline{\quad} = \square$   
 $21 + \underline{\quad} \rightarrow \underline{\quad} + \underline{\quad} \rightarrow \underline{\quad} + \underline{\quad} = \underline{\quad}$   
So:  $21 + 8 = \underline{\quad}$

☺ Complete

3, 6,       ,       ,       ,       ,       ,       ,       

Figure 2.18

---

LO 1.8	LO 2.2	
--------	--------	--

Table 2.22

### 2.3.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.3 fives from any multiple of 5 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

- 1.4.1 whole numbers to at least 2-digit numbers;
- 1.4.2 common fractions including halves and quarters;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;
- 1.10.2 doubling and halving;
- 1.10.3 using concrete apparatus (e.g. counters);
- 1.10.4 number-lines;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 5:** The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

**Assessment Standard 5.1:** We know this when the learner collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher (e.g. ‘how many learners are there in each classroom?’);

**Assessment Standard 5.2:** We know this when the learner sorts physical objects to one attribute chosen by the teacher;

**Assessment Standard 5.4:** We know this when the learner draws pictures and constructs pictographs that have a 1-1 correspondence between own data and representations;

**Assessment Standard 5.5:** We know this when the learner describes own or a peer’s collection of objects, explains how it was sorted, and answers questions about it.

## 2.4 Bonds of 10 and 11<sup>4</sup>

### 2.4.1 MATHEMATICS

### 2.4.2 Mathematics in the world around us

### 2.4.3 EDUCATOR SECTION

### 2.4.4 Memorandum

### 2.4.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and
- develop entrepreneurial opportunities.

- **Integration of Themes:** Friends

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<sup>4</sup>This content is available online at <<http://cnx.org/content/m32443/1.1/>>.

- **Social Justice, Human Rights and a healthy environment:** “I am in Grade 2 with many other children. Each learner needs to be happy. The educator needs a suitable learning environment in order to teach us.”
- Discuss the learner’s responsibility to create such an environment.
- Taking turns on the jungle gym is important – why? Discuss safety, manners, co-operation, etc.
- Learners extend their number concept to 109 on the “jungle gym”. The activities include ordinals, names, symbols and counting forward and backward.
- Position is established by places in the classroom, using a floor map of the room.
- A graph is designed to be completed by collecting information.
- Addition and subtraction are extended to +4, -4, +5, -5, +6, -6, +7, -7.
- Bonds of 10 and 11 are discovered.
- Directions are given to draw and colour a shape.
- Measuring with thumbs and comparison of these measurements using the related vocabulary.

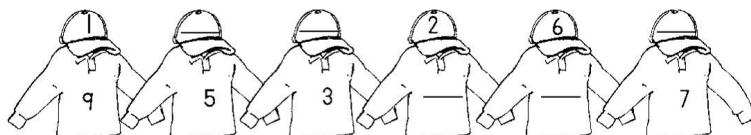
## 2.4.6 LEARNER SECTION

### 2.4.7 Content

#### 2.4.7.1 ACTIVITY: Bonds of 10 and 11 [LO 1.8, LO 1.9, LO 1.12, LO 3.8]

The “Under Ten” Team wear caps and jerseys with numbers that add up to 10.

- Help Sisulu sort them correctly.



**Figure 2.19**

---

- Find out how the “Under Eleven” Team’s caps and jerseys can be sorted so that their numbers add up to 11.

---

Here are 11 dots to help you.
○○○○○
○○○○○
O eleven

**Figure 2.20**

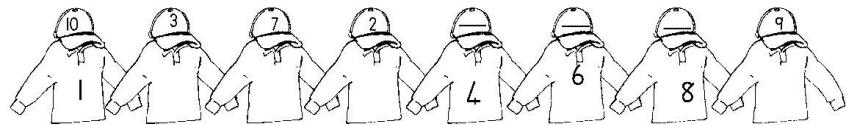


Figure 2.21

---

$$\begin{array}{r} 10 \\ q + 1 \\ \hline \end{array} \qquad \begin{array}{r} 11 \\ 10 + 1 \\ \hline \end{array}$$

•

Figure 2.22

These numbers add up to.....

LO 1.9	
--------	--

Table 2.23

☺ Draw a ✓ if the number sentence is correct. (true number sentence)

☺ Draw a X if the number sentence is wrong.

$14 + 2 = 16$	<input type="checkbox"/>	$31 + 2 = 33$	<input type="checkbox"/>
$16 = 14 + 2$	<input type="checkbox"/>	$33 = 31 + 2$	<input type="checkbox"/>
$16 = 10 + 6$	<input type="checkbox"/>	$33 = 30 + 3$	<input type="checkbox"/>
$23 = 20 + 3$	<input type="checkbox"/>	$45 = 40 + 5$	<input type="checkbox"/>
$27 = 20 + 7$	<input type="checkbox"/>	$17 = 10 + 10$	<input type="checkbox"/>
$61 = 1 + 60$	<input type="checkbox"/>	$77 = 76 + 1$	<input type="checkbox"/>
$61 - 1 = 60$	<input type="checkbox"/>	$77 - 7 = 70$	<input type="checkbox"/>
$30 - 10 = 10$	<input type="checkbox"/>	$20 - 20 = 0$	<input type="checkbox"/>
$78 - 8 = 68$	<input type="checkbox"/>	$66 - 6 = 60$	<input type="checkbox"/>
$45 - 3 = 42$	<input type="checkbox"/>	$33 - 3 = 30$	<input type="checkbox"/>
$20 - 20 = 10$	<input type="checkbox"/>	$40 - 40 = 0$	<input type="checkbox"/>
$84 + 4 = 88$	<input type="checkbox"/>	$35 + 4 = 40$	<input type="checkbox"/>

Figure 2.23

- There were \_\_\_\_\_ correct.
- There were \_\_\_\_\_ wrong.
- Check with a friend.

LO 1.8		LO 1.12	
--------	--	---------	--

Table 2.24

	+ 1	+ 3	- 1	+ 4	- 2	+ 10
6	7					
11						
9						
10						
7						

Table 2.25

	- 2	- 1	+ 3	+ 1	+ 2	- 10
22						
16						
13						
8						
46						

Table 2.26

LO 1.8		LO 1.9	
--------	--	--------	--

Table 2.27

#### 2.4.7.1.1 Directions

---

	↓ down	↑ up	→ forward	← backward					
1	•	•	•	•	•	•	•	•	•
11	•	•	•	•	•	•	•	•	•
21	•	•	•	•	•	•	•	•	•
31	•	•	•	•	•	•	•	•	•
41	•	•	•	•	•	•	•	•	•
51	•	•	•	•	•	•	•	•	•
61	•	•	•	•	•	•	•	•	•
71	•	•	•	•	•	•	•	•	•
81	•	•	•	•	•	•	•	•	•
91	•	•	•	•	•	•	•	•	•

Figure 2.24

---

- Follow the directions:
- Begin at 41. Go forward 2 dots. Move up 3 dots, forward 4, down 3, forward 2.
- Now move down 2, back 2, down 3.
- Now move back 4, up 3, back 2 and up 2.
- You should be back at 41.
- Colour the shape you drew.

LO 3.8	
--------	--

**Table 2.28**

### 2.4.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Assessment Standard 1.12:** We know this when the learner checks the solution given to problems by peers.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.8:** We know this when the learner understands direction.

## 2.5 Birthdays<sup>5</sup>

### 2.5.1 MATHEMATICS

#### 2.5.2 Mathematics in the world around us

#### 2.5.3 EDUCATOR SECTION

#### 2.5.4 Memorandum

#### 2.5.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- **Integration of Themes:** Autumn
- **A healthy environment:** The signs of Autumn.
- This module begins with a graph of birthdays of their friends.
- Number concept and counting activities, stressing the patterns in counting, are extended to 120.
- Halving and doubling within the range 1 to 50.
- Shopping activities include word sums, directions to shops, and selecting the correct coins are included.

---

<sup>5</sup>This content is available online at <<http://cnx.org/content/m32463/1.1/>>.

- Learners complete a shopping graph.
- Bonds of 10, 11, 12, 13, 14 and 15 are introduced and consolidated with a variety of activities.
- Measuring activities reinforce the vocabulary of “a small mass”, “a great mass”, gram and kilogram.
- A recipe for muffins is included and learners experience practically the value of measurement (Technology).
- To extend their sensitivity to different cultures they create their own patterns using shapes and patterns found on huts.
- Learners learn through playing games and therefore a memory game with number sentences has been designed for them.

### 2.5.6 LEANER SECTION

### 2.5.7 Content

#### **2.5.7.1 ACTIVITY: Birthdays [LO 1.1, LO 1.2, LO 1.4, LO 1.7, LO 1.8, LO 4.2, LO 4.3, LO 5.1, LO 5.4, LO 5.5]**

#### **2.5.7.1.1 Birthday Celebrations**

- Join the months of the year with a line from the first to the twelfth.
- Fill in my friends' names under the month in which they have their birthdays.

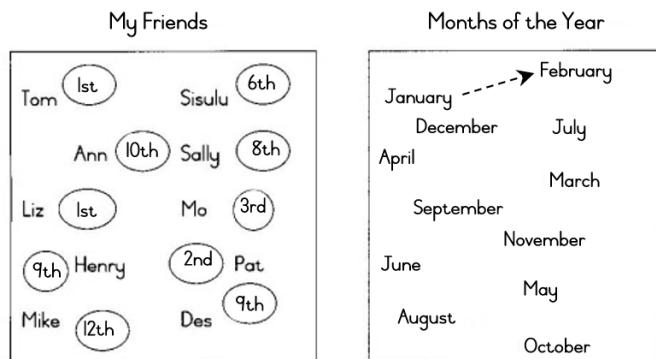


Figure 2.25

## My Birthday graph

Number of Friends											
	Tom										

**Table 2.29**

LO 4.2	LO 5.1	LO 5.4	
--------	--------	--------	--

**Table 2.30****Figure 2.26**

- Choose 10 friends.
- Write their names here:

-----  
-----  
-----

- Find out when each of your ten friends has a birthday.
- Write the month (or the letter of the month e.g. A for April) next to each name.
- Fill in their names on “My Birthday Graph” on page 2 under the correct month.

LO 5.1	LO 5.4	
--------	--------	--

**Table 2.31**

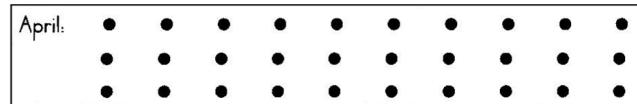
- Fill in the missing words.

1. I filled in \_\_\_\_\_ (how many) children's birthdays on my graph.
2. Most children have their birthdays in \_\_\_\_\_ (name of month).
3. The least number of birthdays are in \_\_\_\_\_ (name of month).
4. There are more birthdays in \_\_\_\_\_ (name of month). than in \_\_\_\_\_ (name of month).
5. There are fewer birthdays in \_\_\_\_\_ (name of month). than in \_\_\_\_\_ (name of month).
6. I must remember my best friend's birthday is in \_\_\_\_\_.
7. Use a calendar to find out how many days there are in each month.  
In January . . . . . May . . . . . September . . . . .  
February . . . . . June . . . . . October . . . . .  
March . . . . . July . . . . . November . . . . .  
April . . . . . August . . . . . December . . . . .
8. Ask your teacher to teach you to use your knuckles to find out how many days there are in each month.

LO 4.3	LO 5.5	
--------	--------	--

**Table 2.32**

- Let's count the days in April. We'll make a dot for every day.

**Figure 2.27**

- How did you count them?

In 1'e, 2's, 3'e, 5'e or 10'e?

- Draw a circle around your answer.
- June has the same number of days.
- Make a triangle for every day.
- Count the triangles in a different way.
- Draw a circle around 1's or 2's or 3's or 5's or 10's to show how you counted the triangles.

---

June:	$\Delta\Delta\Delta$
-------	----------------------

**Figure 2.28**


---

- Do the same with the days in September.
- Use a circle.
- Complete: I counted them in \_\_\_\_\_

---

September:	<input type="circle"/> <input type="circle"/>
------------	---

**Figure 2.29**


---

LO 1.1	LO 1.2	
--------	--------	--

**Table 2.33**

All about April, June and September

- Look at April's days on page 4.

1. There are \_\_\_\_\_ groups of ten in \_\_\_\_\_ 30 \_\_\_\_\_ days.
2. There are \_\_\_\_\_ groups of five in \_\_\_\_\_ days.
3. There are \_\_\_\_\_ groups of two in \_\_\_\_\_ days.

- Write a number sentence for 1.

---

- Write a number sentence for 2.

---

- Write a number sentence for 3.

---

- If we add April's and June's days there are \_\_\_\_\_ altogether. We have doubled their days.
- Write a number sentence for this story.

---

-----

- If we add September's days too, the total will be -----
- Write a number sentence.

-----

- Double these numbers.

20	30	40	50
22	34	44	51

LO 1.7	LO 1.8	LO 1.10	
--------	--------	---------	--

**Table 2.34**

### 2.5.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.7:** We know this when the learner solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (e.g.  $\frac{1}{4}$ );

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;
- 1.10.2 doubling and halving;
- 1.10.3 using concrete apparatus (e.g. counters);
- 1.10.4 number-lines;

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.2:** We know this when the learner names in order the days of the week and the months of the year;

**Assessment Standard 4.3:** We know this when the learner calculates elapsed time;

**Learning Outcome 5:** The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

**Assessment Standard 5.1:** We know this when the learner collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher (e.g. 'how many learners are there in each classroom?');

**Assessment Standard 5.4:** We know this when the learner draws pictures and constructs pictographs that have a 1-1 correspondence between own data and representations;

**Assessment Standard 5.5:** We know this when the learner describes own or a peer's collection of objects, explains how it was sorted, and answers questions about it.

## 2.6 Number patterns<sup>6</sup>

### 2.6.1 MATHEMATICS

#### 2.6.2 Mathematics in the world around us

#### 2.6.3 EDUCATOR SECTION

#### 2.6.4 Memorandum

#### 2.6.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
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- Learners complete a shopping graph.
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- A recipe for muffins is included and learners experience practically the value of measurement (Technology).
- To extend their sensitivity to different cultures they create their own patterns using shapes and patterns found on huts.
- Learners learn through playing games and therefore a memory game with number sentences has been designed for them.

---

<sup>6</sup>This content is available online at <<http://cnx.org/content/m32464/1.1/>>.

### 2.6.6 LEANER SECTION

#### 2.6.7 Content

**2.6.7.1 ACTIVITY:** Number patterns [LO 1.3, LO 1.4, LO 1.6, LO 1.8, LO 1.10, LO 2.2, LO 3.8, LO 5.4]

##### 2.6.7.1.1 Number Patterns

- The number of days in January has been written in a pattern for you to count. Continue the counting pattern by joining the numbers with a line. Begin on 2.

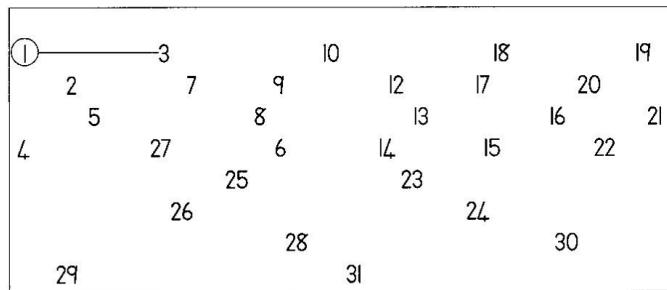


Figure 2.30

- These are all \_\_\_\_\_ (even or uneven) numbers.
- Continue the counting pattern for the days in March. Begin on 1.

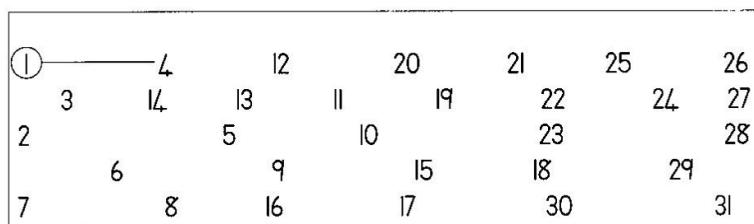


Figure 2.31

- Even numbers joined: \_\_\_\_\_
- Uneven numbers joined: \_\_\_\_\_
- Days in January and March: \_\_\_\_\_

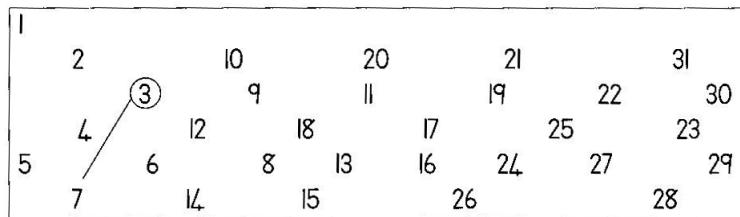
Total:

LO 2.2	
--------	--

**Table 2.35**

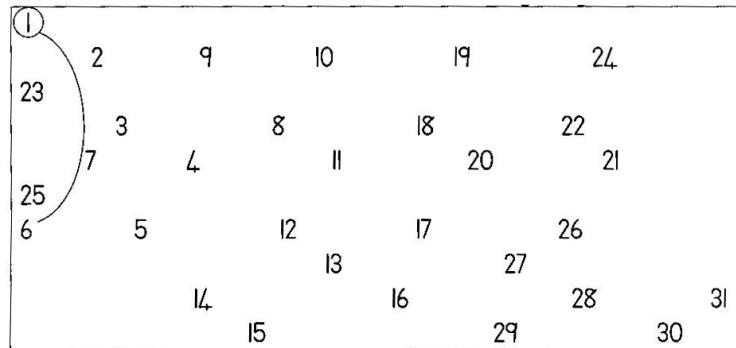
#### 2.6.7.1.2 Number Patterns

- Continue the counting pattern for the month of May. Begin on 2.



**Figure 2.32**

- I used \_\_\_\_\_ numbers. Even/uneven.
- Continue the counting pattern for the month of July. Begin on 1.



**Figure 2.33**

- I used these even numbers: \_\_\_\_\_
- I used these uneven numbers: \_\_\_\_\_
- Continue these counting patterns:

---

2, 12, 22, . . . . . , 72.  
1, 11, 21, . . . . . , 71.  
23, 33, 43, . . . . . , 93.

**Figure 2.34**

LO 2.2	
--------	--

**Table 2.36****2.6.7.1.3 Rename these numbers**

1610 + 6	24. . . . .	36. . . . .	40. . . . .	58. . . . .
51. . . . .	13. . . . .	29. . . . .	94. . . . .	62. . . . .
87. . . . .	50. . . . .	96. . . . .	83. . . . .	74. . . . .

**Table 2.37**

- Write these number names.

58 \_\_\_\_\_  
94 \_\_\_\_\_  
62 \_\_\_\_\_  
74 \_\_\_\_\_  
36 \_\_\_\_\_  
87 \_\_\_\_\_  
40 \_\_\_\_\_  
13 \_\_\_\_\_

- Arrange these numbers from the least to the most.

16 4 19 23 11  
-----

LO 1.3	LO 1.4	LO 1.10	
--------	--------	---------	--

**Table 2.38**

- Des says, “Look how much I have saved.”

---

(50c) (10c) (5c) (2c)	I have saved ..... c.
-----------------------	-----------------------

**Figure 2.35**

- Sisulu says, “Look how much I have saved.”

---

(50c) (50c) (50c) (10c) (10c)	I .....
(1c) (1c) (1c)	.....

**Figure 2.36**

- Mo says, “Look how much I have saved.”

---

(Rl) (Rl) (Rl) (20c) (10c)	I .....
	.....

**Figure 2.37**

\_\_\_\_\_ has saved the most.  
 \_\_\_\_\_ has saved the least.  
 Sisulu has saved more than \_\_\_\_\_

- Arrange these coins from the most to the least.

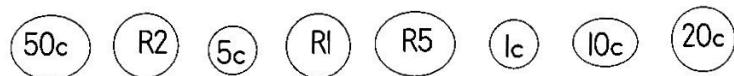


Figure 2.38

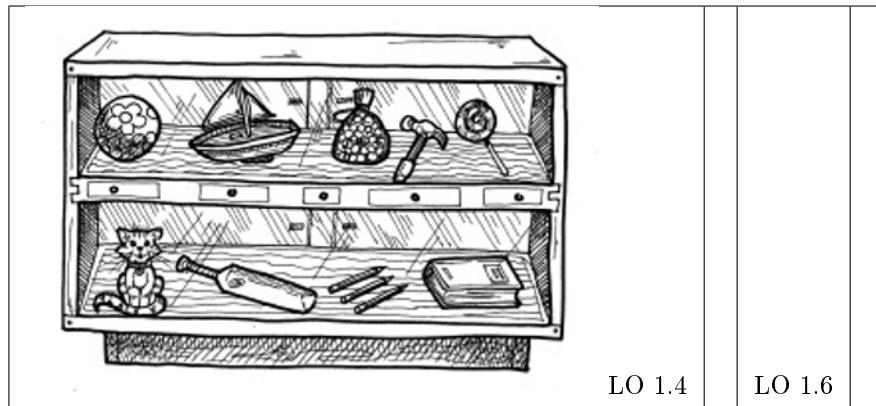


Table 2.39

- Price chart

ball 60c, yacht 55c, marbles 30c, hammer 25c, lollipop 10c, kitten 75c, racket 45c, 1 pencil 20c, book 30c

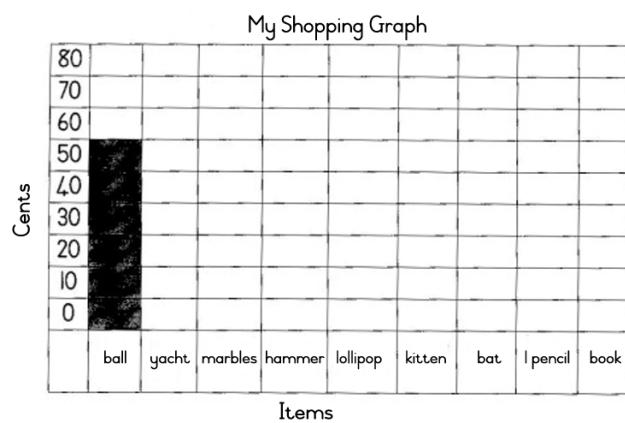


Figure 2.39

- Complete the graph.

LO 5.4	<input type="text"/>
--------	----------------------

**Table 2.40**

- Read.
- Draw the coins.
- Look at the items on the previous page.

Liz bought a \_\_\_\_\_ for a \_\_\_\_\_. c.  
She paid:

Sally bought a \_\_\_\_\_ for \_\_\_\_\_

c.

She paid:

Mike bought a \_\_\_\_\_ for \_\_\_\_\_. c.  
He paid:

Tom bought a \_\_\_\_\_ for \_\_\_\_\_. c.  
He paid:

I bought a hammer for 25c. I paid: 10c + 20c. My change was \_\_\_\_\_

LO 1.6	<input type="text"/>
--------	----------------------

**Table 2.41**

#### **2.6.7.1.4 Money! Money! Money!**

- Mom sorts out her coins to pay for :

 R9,00	R2
 R6,50	
 R3,25	
 99c	

Figure 2.40

---

LO 1.6	<input type="checkbox"/>
--------	--------------------------

Table 2.42

#### 2.6.7.1.5 Off to the Shops

- Begin at bus stop 50.
- Complete the road to the shoe shop.

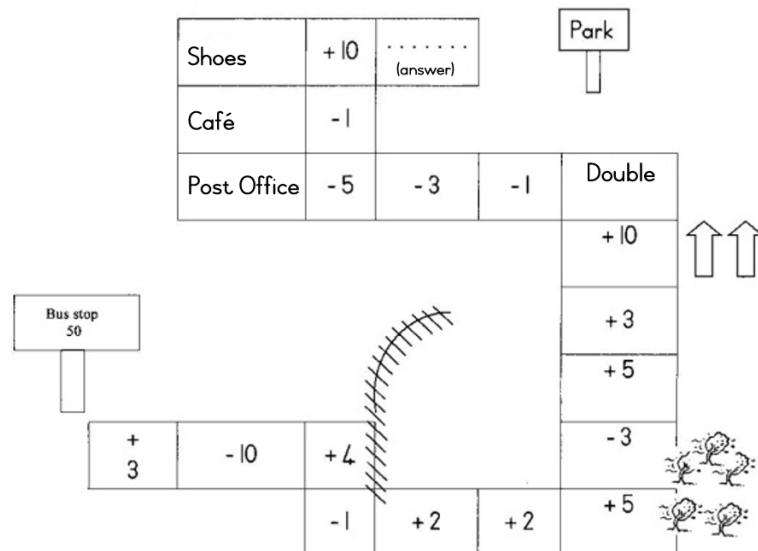


Figure 2.41

- Use these descriptions to tell Liz and Mo how to get from bus stop 50 to the shoe shop.

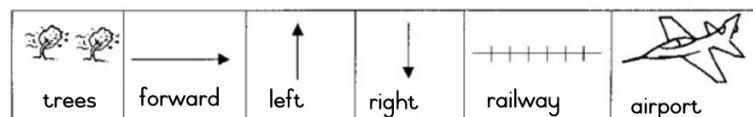


Figure 2.42

- Write the directions.

LO 1.8	LO 3.8	
--------	--------	--

Table 2.43

### 2.6.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares numbers;

**Assessment Standard 1.6:** We know this when the learner solves money problems involving totals and change in rand and cents;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;
- 1.10.2 doubling and halving;
- 1.10.3 using concrete apparatus (e.g. counters);
- 1.10.4 number-lines;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.8:** We know this when the learner understands direction.

**Learning Outcome 5:** The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

**Assessment Standard 5.1:** We know this when the learner collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher (e.g. 'how many learners are there in each classroom?');

**Assessment Standard 5.4:** We know this when the learner draws pictures and constructs pictographs that have a 1-1 correspondence between own data and representations;

**Assessment Standard 5.5:** We know this when the learner describes own or a peer's collection of objects, explains how it was sorted, and answers questions about it.

## 2.7 Partners<sup>7</sup>

### 2.7.1 MATHEMATICS

#### 2.7.2 Mathematics in the world around us

#### 2.7.3 EDUCATOR SECTION

#### 2.7.4 Memorandum

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5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;

---

<sup>7</sup>This content is available online at <<http://cnx.org/content/m32466/1.1/>>.

7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
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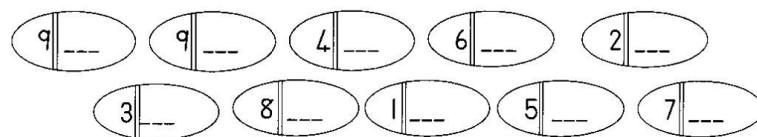
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- Learners learn through playing games and therefore a memory game with number sentences has been designed for them.

## 2.7.6 LEARNER SECTION

### 2.7.7 Content

#### 2.7.7.1 ACTIVITY: Partners [LO 1.4, LO 1.8, LO 1.9]

- Write the partners of 10 as quickly as you can.



**Figure 2.43**

---

- If you know them really well, you can write the partners of 11 quickly because 11 is just one more than 10.
- Try them: partners of 11.

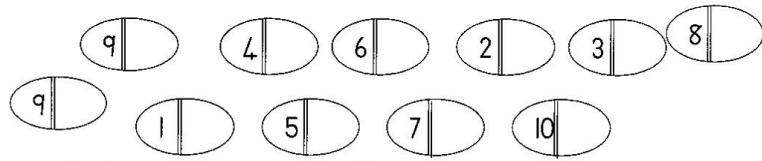


Figure 2.44

- Think of the partners of 10 when you do the partners of 12. 12 is just two more than 10.

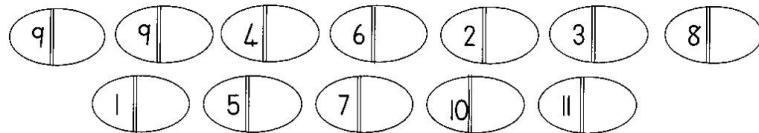


Figure 2.45

- Fill in the missing numbers.

$$\begin{array}{rcl} 6 + 4 = \underline{\hspace{2cm}} & 3 + \underline{\hspace{2cm}} = 10 & 9 + 1 + 1 = \underline{\hspace{2cm}} \\ 6 + 5 = \underline{\hspace{2cm}} & 3 + \underline{\hspace{2cm}} = 11 & 8 + 2 + 2 = \underline{\hspace{2cm}} \\ 6 + 6 = \underline{\hspace{2cm}} & 3 + \underline{\hspace{2cm}} = 12 & 7 + 3 + 2 = \underline{\hspace{2cm}} \end{array}$$

LO 1.9	<input type="text"/>
--------	----------------------

Table 2.44

### 2.7.7.1.1 Numbers in Nomograms

- Let the nomogram help you find out the partners of 13. See in which order the numbers are written.

0	1	2	3	4	5	6	7	8	9	10	11	12	13
13	12	11	10	9	8	7	6	5	4	3	2	1	0

Figure 2.46

- Write the partners of 13. (Number sentences).

---

$0 + 13 = 13$	7.....
$1 + ..... = .....$	.....
$2.....$	.....
$3.....$	.....
$4.....$	.....
$5.....$	.....
$6.....$	.....

**Figure 2.47**

- Arrange these numbers from the most to the least.

3 1 24 11 18 26

LO 1.4	LO 1.9	
--------	--------	--

**Table 2.45**

- Let the nomogram on page 15 help you to write the subtraction sums of 13.

Remember:  $10 + 3 = 13$  so  $3 + 10 = 13$

So  $13 - 3 = 10$  and  $13 - 10 = 3$

$$\begin{aligned}
 13 - 1 &= \text{-----} \\
 13 - 2 &= \text{-----} \\
 13 - 2 &= \text{-----} \\
 13 - 3 &= \text{-----} \\
 13 - 4 &= \text{-----} \\
 13 - 5 &= \text{-----} \\
 13 - 12 &= \text{-----} \\
 13 - 11 &= \text{-----} \\
 13 - 10 &= \text{-----} \\
 13 - 9 &= \text{-----} \\
 13 - 8 &= \text{-----} \\
 13 - 7 &= \text{-----}
 \end{aligned}$$

- This nomogram is the same, except that the numbers are arranged in two groups. It will help you with partners of 14.

---

0   14	1   13	2   12	3   11	4   10	5   9	6   8	
7   7	8   6	9   5	10   4	11   3	12   2	13   1	14   0

**Figure 2.48**


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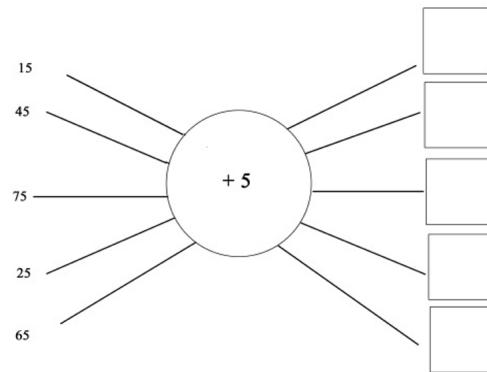
LO 1.9	
--------	--

**Table 2.46**

- Complete the number sentences. Let the nomogram help you.

$$\begin{aligned}
 3 + \underline{\hspace{2cm}} &= 14 \\
 8 + \underline{\hspace{2cm}} &= 14 \\
 10 + \underline{\hspace{2cm}} &= 14 \\
 2 + \underline{\hspace{2cm}} &= 14 \\
 4 + \underline{\hspace{2cm}} &= 14 \\
 5 + \underline{\hspace{2cm}} &= 14 \\
 11 + \underline{\hspace{2cm}} &= 14 \\
 9 + \underline{\hspace{2cm}} &= 14 \\
 14 - 3 &= \dots \\
 14 - 8 &= \dots \\
 14 - 10 &= \dots \\
 14 - 2 &= \dots \\
 14 - 4 &= \dots \\
 14 - 5 &= \dots \\
 14 - 11 &= \dots \\
 14 - 9 &= \dots
 \end{aligned}$$

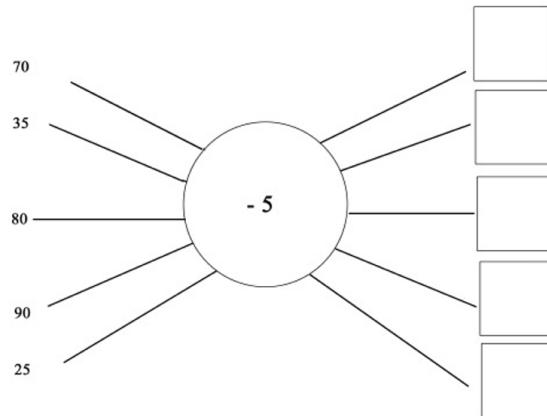
- Now try adding 5 more.

**Figure 2.49**

LO 1.8		LO 1.9	<input type="text"/>
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**Table 2.47**

- Complete:

**Figure 2.50**

- Discover the partners of 15 in the wheel.
- Check your friend's wheel.

- Write the number sentences.

---

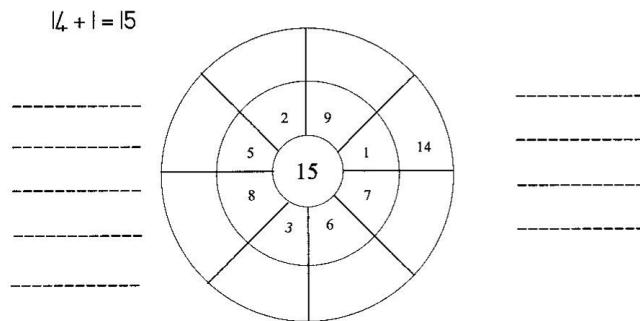


Figure 2.51

LO 1.8		LO 1.9	
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Table 2.48

### 2.7.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares numbers;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations.

## 2.8 Measure activities<sup>8</sup>

### 2.8.1 MATHEMATICS

### 2.8.2 Mathematics in the world around us

### 2.8.3 EDUCATOR SECTION

### 2.8.4 Memorandum

### 2.8.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;

<sup>8</sup>This content is available online at <<http://cnx.org/content/m32467/1.1/>>.

2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. be culturally and aesthetically sensitive across a range of social contexts;
11. explore education and career opportunities; and
12. develop entrepreneurial opportunities.

- **Integration of Themes:** Autumn
- **A healthy environment:** The signs of Autumn.
- This module begins with a graph of birthdays of their friends.
- Number concept and counting activities, stressing the patterns in counting, are extended to 120.
- Halving and doubling within the range 1 to 50.
- Shopping activities include word sums, directions to shops, and selecting the correct coins are included.
- Learners complete a shopping graph.
- Bonds of 10, 11, 12, 13, 14 and 15 are introduced and consolidated with a variety of activities.
- Measuring activities reinforce the vocabulary of “a small mass”, “a great mass”, gram and kilogram.
- A recipe for muffins is included and learners experience practically the value of measurement (Technology).
- To extend their sensitivity to different cultures they create their own patterns using shapes and patterns found on huts.
- Learners learn through playing games and therefore a memory game with number sentences has been designed for them.

### 2.8.6 LEANER SECTION

### 2.8.7 Content

#### **2.8.7.1 ACTIVITY: Measure activities [LO 1.2, LO 1.4, LO 1.7, LO 1.8 LO 1.10, LO 1.11, LO 2.2, LO 4.6, LO 4.7]**

- What does the balance tell you about the mass of my toys?

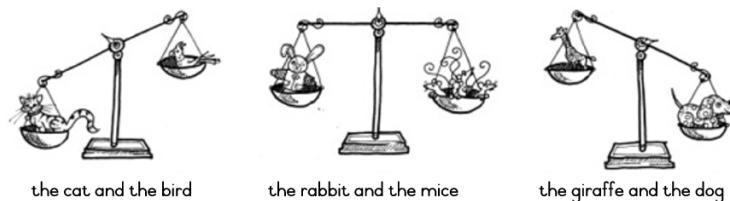


Figure 2.52

- Discuss their mass with a friend.
- Complete the list to say which of the toys have a \_\_\_\_\_

#### 2.8.7.1.1 Great mass

-----  
-----

#### 2.8.7.1.2 Small mass

-----  
-----

#### 2.8.7.1.3 Same mass

-----  
-----

- Complete:

The mass of the cat is the same as \_\_\_\_\_ stones  
 The mass of the rabbit is the same as \_\_\_\_\_ stones

LO 4.6	
--------	--

**Table 2.49**

- Compare the mass of your pencil case and your friend's pencil case. Use the balance.
- Tell each other what conclusions you come to.
- Choose stones or blocks or shells and see how many have the same mass as your pencil case.
- Complete:

My pencil case has the same mass as \_\_\_\_\_  
 (stones, blocks, shells)

- Now find out about these on the balance and complete the sentences.

1. How many shells have the same mass as my pencil?  
 Write: My pencil has \_\_\_\_\_
2. How many blocks have the same mass as my lunch box?  
 Write: My lunch box has \_\_\_\_\_

LO 4.6	
--------	--

**Table 2.50**

- Henry, Mike and Tom jog every morning to keep fit.
- Complete the kilometres on the track.
- Begin at 93.

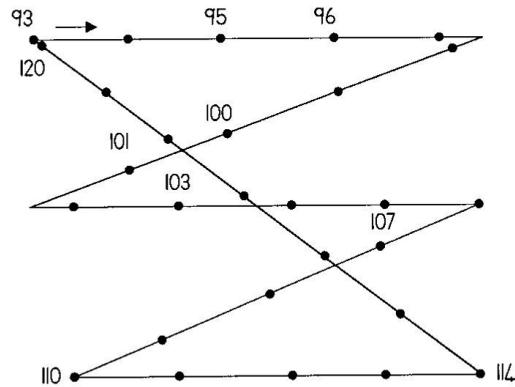


Figure 2.53

- On Monday they started at 120 and stopped at 93. Count backwards.
- Fill in the missing numbers:

100 . . . . . 102, 99 . . . . . 101, 103 . . . . . 105,  
96 . . . . . 98, 111 . . . . . 113, 110 . . . . . 112.

- Henry started at 93 and rested 10 km later. He was at \_\_\_\_\_ km.
- Mike rested 6 km further. He was at \_\_\_\_\_ km.
- Tom rested between 110 and 112 km. He was at \_\_\_\_\_ km.

LO 1.2		LO 1.4		LO 2.2	
--------	--	--------	--	--------	--

Table 2.51

- Pat took a large handful of beans. So did Sally.
- Guess how many each had. Pat \_\_\_\_\_ Sally \_\_\_\_\_

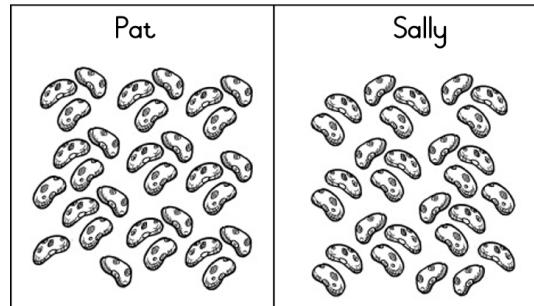


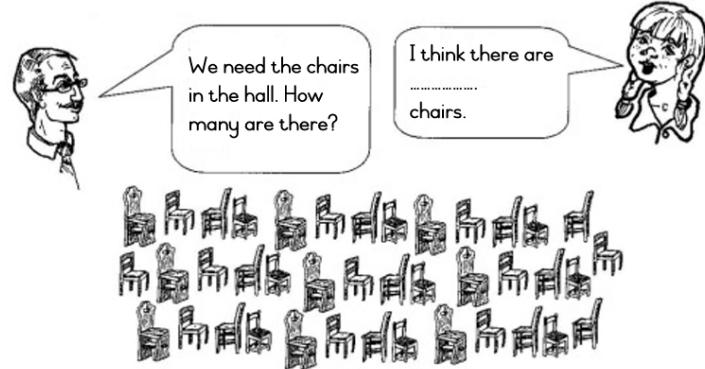
Figure 2.54

Group them into 10's.

- Count Pat's beans. \_\_\_\_\_ beans.
- Count Sally's beans. \_\_\_\_\_ beans.
- Did you guess too many, too few or just right?

I \_\_\_\_\_

---



**Figure 2.55**

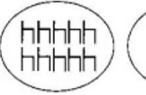
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- Group them into 10's.
- Count them. There are \_\_\_\_\_ chairs.

LO 1.1	LO 1.8	
--------	--------	--

**Table 2.52**

- Arrange the chairs in the hall into groups of 10 and ones.

	<b>30</b>	thirty
h .....	60	.....
h .....	48	.....
.....	54	.....
.....	39	.....

**Figure 2.56**

LO 1.10	
---------	--

**Table 2.53**

1 24 children came to practise. Mr King wanted 8 children in a team.

How many teams did he make? Use counters or draw.

Mr King made \_\_\_\_\_ teams.

2. Mom has R30,00 in her purse. She divides it equally among Des, Liz and Mo. How much will each get?

Tell a friend how you found out what each one will get \_\_\_\_\_

3. Tom, Sisulu and Henry each lost 3 buttons when they were playing "Catch". How many buttons did they lose altogether?

Write a number sentence. \_\_\_\_\_

LO 1.7	LO 1.10	LO 1.11	
--------	---------	---------	--

**Table 2.54**

- Look through a catalogue, a magazine or a newspaper and find things that are sold by the gram or kilogram. Cut them out and paste them here. Check the prices of each and discuss them with a friend.

LO 4.7	
--------	--

**Table 2.55****2.8.7.1.4 Mom makes Muffins for Mo.**

Perhaps you and your teacher would also like to make muffins for tea.

- Try this recipe. (12 muffins)
- **You need :**

500g cake flour  
 2,5g salt  
 1 egg  
 50g margarine  
 20g baking powder  
 25g sugar  
 225ml milk

- **You also need :**

a mixing bowl  
 a spoon  
 muffin tins which are greased

- Method:

1. Beat the egg and mix it with the milk.
2. Sift all the dry ingredients together.
3. Add the egg mixture and mix.
4. Melt the margarine and add to the mixture.
5. Measure off spoonfuls of mixture into the greased muffin tin.
6. Bake in an oven with temperature at 200°C for 15 to 20 minutes.

Serve with margarine. Enjoy!!

- Compare this recipe with the one Mom uses.

LO 4.7	
--------	--

**Table 2.56****2.8.8 Assessment**

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares numbers:

**Assessment Standard 1.7:** We know this when the learner solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (e.g.  $\frac{1}{4}$ );

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;
- 1.10.2 doubling and halving;
- 1.10.3 using concrete apparatus (e.g. counters);
- 1.10.4 number-lines;

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.6:** We know this when the learner estimates, measures, compares and orders three-dimensional objects using non-standard measures;

**Assessment Standard 4.7:** We know this when the learner gains experience with standard measures.

## 2.9 Patterns<sup>9</sup>

### 2.9.1 MATHEMATICS

### 2.9.2 Mathematics in the world around us

### 2.9.3 EDUCATOR SECTION

### 2.9.4 Memorandum

### 2.9.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- **Integration of Themes:** Autumn
- **A healthy environment:** The signs of Autumn.
- This module begins with a graph of birthdays of their friends.
- Number concept and counting activities, stressing the patterns in counting, are extended to 120.
- Halving and doubling within the range 1 to 50.

---

<sup>9</sup>This content is available online at <<http://cnx.org/content/m32469/1.1/>>.

- Shopping activities include word sums, directions to shops, and selecting the correct coins are included.
- Learners complete a shopping graph.
- Bonds of 10, 11, 12, 13, 14 and 15 are introduced and consolidated with a variety of activities.
- Measuring activities reinforce the vocabulary of “a small mass”, “a great mass”, gram and kilogram.
- A recipe for muffins is included and learners experience practically the value of measurement (Technology).
- To extend their sensitivity to different cultures they create their own patterns using shapes and patterns found on huts.
- Learners learn through playing games and therefore a memory game with number sentences has been designed for them.

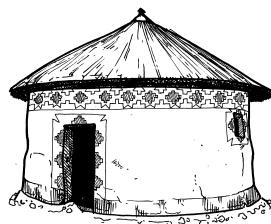
## 2.9.6 LEARNER SECTION

### 2.9.7 Content

#### 2.9.7.1 ACTIVITY: Patterns [LO 1.8, LO 1.9, LO 1.4, LO 2.1, LO 2.3, LO 2.5, LO 4.6]

- African People in other parts of South Africa often decorate their homes with beautiful patterns of different colours and shapes.
- Colour the patterns.

---



**Figure 2.57**

---

- Design your own African pattern for the border around your family photo.
- Draw your family from the shortest to the tallest.
- Show the class your beautiful, colourful picture.

LO 2.1	LO 2.3	LO 2.5	LO 4.6	
--------	--------	--------	--------	--

**Table 2.57**

- Paste this page on cardboard.
- Cut out the squares.
- Place them face down.
- Take turns to turn one card over.
- Read the number sentence.

- Turn the card face down again.
- Your partner takes a turn and tries to find a card with the same answer.
- Keep the partners and see who can collect the most pairs.

15 – 14	7 – 6	10 – 8	22- 20	9 – 6	13 – 10
11 – 7	12 – 8	13 – 8	25 – 20	15 – 9	12 – 6
17 + 4	24 – 3	30 – 10	17 + 3	9 – 9	20 – 2
10 – 3	14 – 7	10 + 6	8 + 8	36 – 3	30 + 3
46 + 4	53 – 3	95 – 5	80 + 10	20 + 4	28 - 4

Table 2.58

LO 1.8	LO 1.9	
--------	--------	--

Table 2.59

### 2.9.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.1:** We know this when the learner copies and extends simple patterns using physical objects and drawings;

**Assessment Standard 2.3:** We know this when the learner creates own patterns;

**Assessment Standard 2.5:** We know this when the learner identifies, describes and copies geometric patterns in natural and cultural artefacts of different cultures and times.

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.6:** We know this when the learner estimates, measures, compares and orders three-dimensional objects using non-standard measures.



# Chapter 3

## Term 3

### 3.1 Vehicles - distance<sup>1</sup>

#### 3.1.1 MATHEMATICS

#### 3.1.2 Mathematics in the world around us

#### 3.1.3 EDUCATOR SECTION

#### 3.1.4 Memorandum

#### 3.1.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- A healthy environment: Many vehicles use our roads and these are a source of pollution. Discuss. Safety on the roads is essential. Learners must obey road rules and safety measures taken by the school and road authorities. Discuss how learners can be safe while walking / travelling to and from school.
- Plants and flowers make our environment pretty and attractive. Learners must know these should be protected and not destroyed.
- Inclusively: Man, animals and plants all rely on one another to survive. Discuss this statement and give examples.

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m32470/1.1/>>.

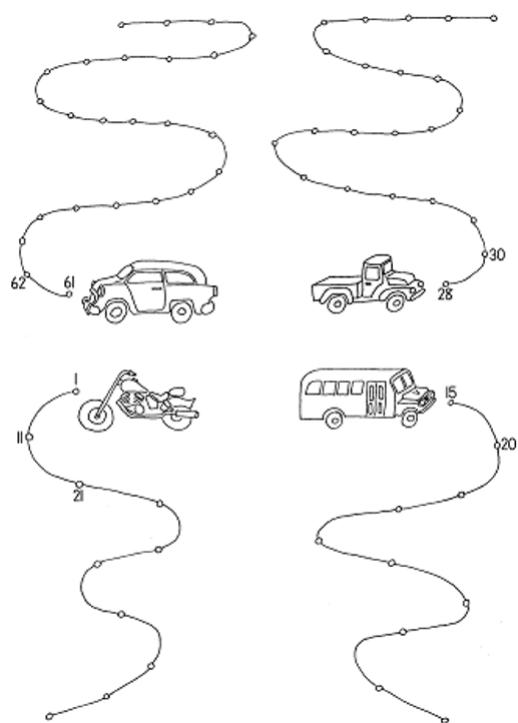
- Vehicles are essentially part of the learner's experience and through these activities of counting to 150, a graph determining distances and vehicles, and the extension of bonds of 16, are used.
- Up to 50 objects are estimated, grouped and counted.
- The multiplication tables of 2 is introduced and addition and subtraction of 6, 7, 8 and 9 included.
- Shapes are identified and sorted by colouring

### 3.1.6 LEARNER SECTION

#### 3.1.7 Content

##### 3.1.7.1 ACTIVITY: Vehicles - distance [LO 1.2.1, LO 1.2.2, LO 1.2.4, LO 1.3, LO 1.4.1, LO 1.8.1, LO 1.8.3, LO 1.9.1, LO 2.2, LO 5.5]

- Continue the counting pattern for each vehicle in kilometres.



**Figure 3.1**

- The car travelled \_\_\_\_\_ km.
- The truck travelled \_\_\_\_\_ km.
- The motorbike travelled \_\_\_\_\_ km.
- The bus travelled \_\_\_\_\_ km.

LO 2.2	_____
--------	-------

**Table 3.1**

- Look at the graph of the number of kilometres that each vehicle travelled on each day.

---

	Monday	Tuesday	Wednesday	Thursday
 the truck	61	49	79	83
 the car	101	58	46	80
 the motorbike	18	37	40	26
 the bus	43	88	57	39

**Figure 3.2**

Answer the questions:

- Which one travelled the furthest on Monday? \_\_\_\_\_
- Which one travelled the furthest on Tuesday? \_\_\_\_\_
- Which one travelled the furthest on Wednesday? \_\_\_\_\_
- Which one travelled the furthest on Thursday? \_\_\_\_\_

LO 5.5	
--------	--

**Table 3.2**

- Look at the graph and answer the questions.
- Which vehicle travelled the least number of kilometres on Monday?
- Which vehicle travelled the least number of kilometres on Tuesday?
- Which vehicle travelled the least number of kilometres on Wednesday?
- Which vehicle travelled the least number of kilometres on Thursday?
- Arrange each vehicle's kilometres for each day from the least to the most.

The truck: 49 \_\_\_\_\_

The car: \_\_\_\_\_

The motorbike: \_\_\_\_\_

The bus: \_\_\_\_\_

LO 1.4.1		LO 5.5	
----------	--	--------	--

**Table 3.3**

- Estimate (guess) how many tyres are lying in the yard.

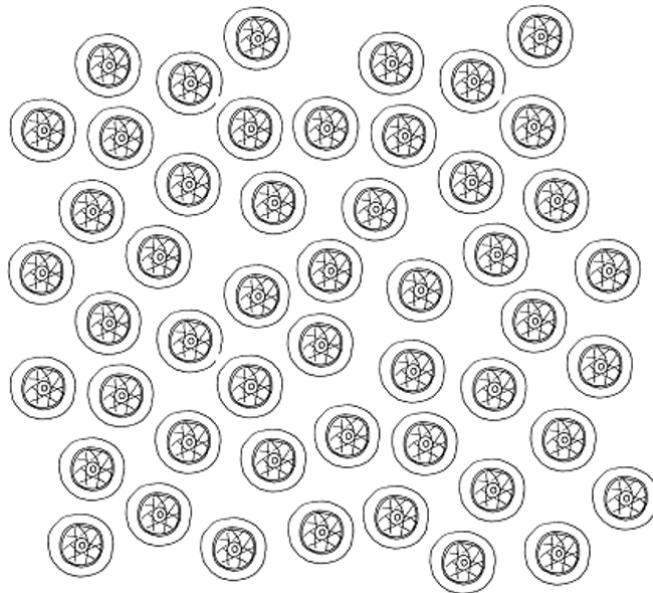
I think there are \_\_\_\_\_ tyres.

- Count them.

I counted \_\_\_\_\_ tyres.

- I estimated too many or too few?

I estimated \_\_\_\_\_

**Figure 3.3**

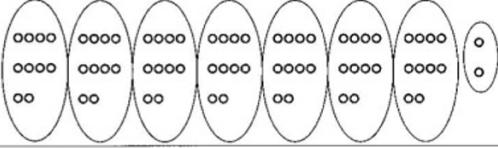
- Count the tyres in 1's.
- Count the tyres in 2's.
- Count the tyres in 10's. Group them first.

LO 1.2.1		LO 1.2.2		LO 1.2.4		LO 1.8.3	
----------	--	----------	--	----------	--	----------	--

**Table 3.4**

- Complete the columns.

---

72	seventy two	
64		
88		
50		
69		

**Figure 3.4**


---

- Arrange the numbers above from the least to the most.

---

- Arrange the numbers above from the most to the least.

---

LO 1.3	LO 1.4.1	
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**Table 3.5**

- Complete.

The truck travels 5 km further \_\_\_\_\_

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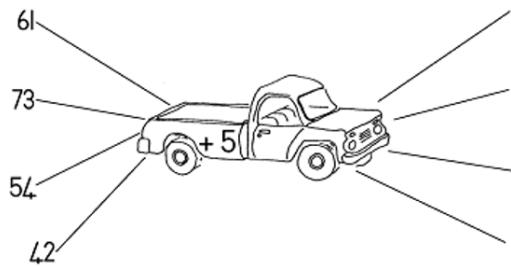


Figure 3.5

- The car travels 10 km further \_\_\_\_\_

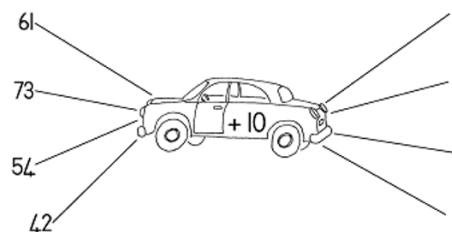


Figure 3.6

- The bus travels \_\_\_\_\_ further and \_\_\_\_\_ further.

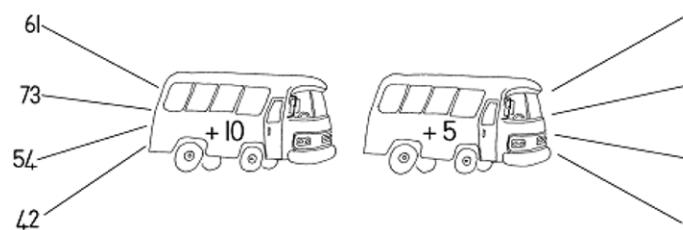
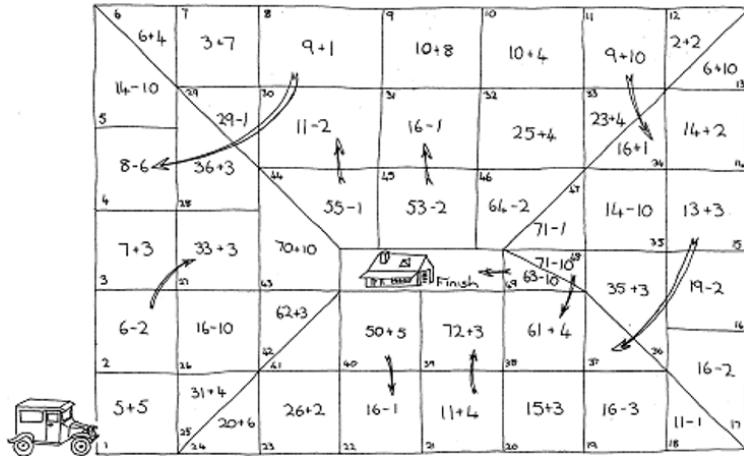


Figure 3.7

**Table 3.6**

- A game to play with a friend.
- Take turns to pick up 1 or 2 or 3 counters.
- Let your partner guess how many you have picked up.
- If he guesses correctly, you may make so many moves.
- If he guesses wrongly, you may move 4 spaces.
- Follow the arrows; move up, move down.
- Answer the sum on the square where you land.
- A correct answer – stay here. A wrong answer – move one square back.
- The winner is the one to complete the track first.

**Figure 3.8**

LO 1.9.1	
----------	--

**Table 3.7**

### 3.1.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

1.4.1 whole numbers to at least 2-digit numbers;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems involving;

1.8.1 addition and subtraction of whole numbers with at least 2 digits;

1.8.3 estimation;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving;

1.9.1 addition and subtraction for numbers to at least 20;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 5:** The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

**Assessment Standard 5.5:** We know this when the learner describes own or a peer's collection of objects, explains how it was sorted, and answers questions about it.

## 3.2 Doubling<sup>2</sup>

### 3.2.1 MATHEMATICS

#### 3.2.2 Mathematics in the world around us

#### 3.2.3 EDUCATOR SECTION

#### 3.2.4 Memorandum

#### 3.2.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- A healthy environment: Many vehicles use our roads and these are a source of pollution. Discuss. Safety on the roads is essential. Learners must obey road rules and safety measures taken by the school and road authorities. Discuss how learners can be safe while walking / travelling to and from school.
- Plants and flowers make our environment pretty and attractive. Learners must know these should be protected and not destroyed.

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<sup>2</sup>This content is available online at <<http://cnx.org/content/m32508/1.1/>>.

- Inclusively: Man, animals and plants all rely on one another to survive. Discuss this statement and give examples.
- Vehicles are essentially part of the learner's experience and through these activities of counting to 150, a graph determining distances and vehicles, and the extension of bonds of 16, are used.
- Up to 50 objects are estimated, grouped and counted.
- The multiplication tables of 2 is introduced and addition and subtraction of 6, 7, 8 and 9 included.
- Shapes are identified and sorted by colouring

### 3.2.6 LEARNER SECTION

#### 3.2.7 Content

##### 3.2.7.1 ACTIVITY: Doubling [LO 1.9.2, LO 1.10.2]

- Complete:

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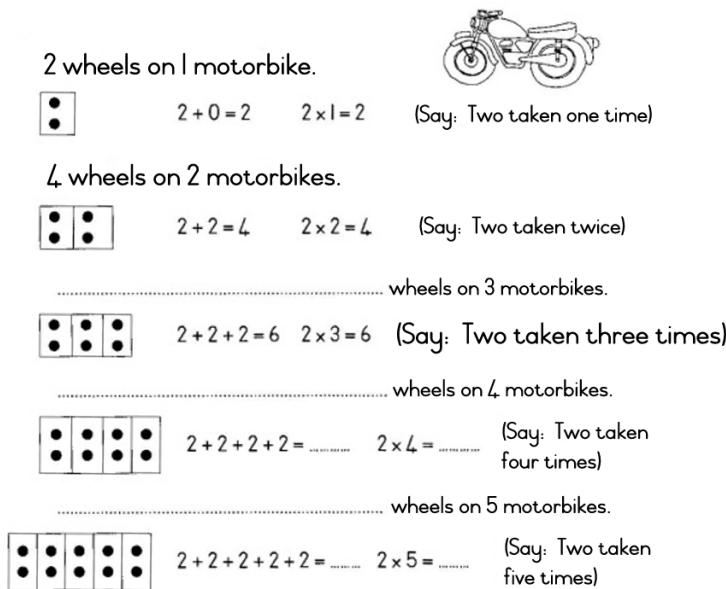


Figure 3.9

---

- Complete:

$$\begin{array}{ll} 2+0 = \dots & \text{so, } 2 \times 1 = \dots \\ 2+2 = \dots & \text{so, } 2 \times 2 = \dots \\ 2+2+2 = \dots & \text{so, } 2 \times 3 = \dots \\ 2+2+2+2 = \dots & \text{so, } 2 \times 4 = \dots \\ 2+2+2+2+2 = \dots & \text{so, } 2 \times 5 = \dots \end{array}$$

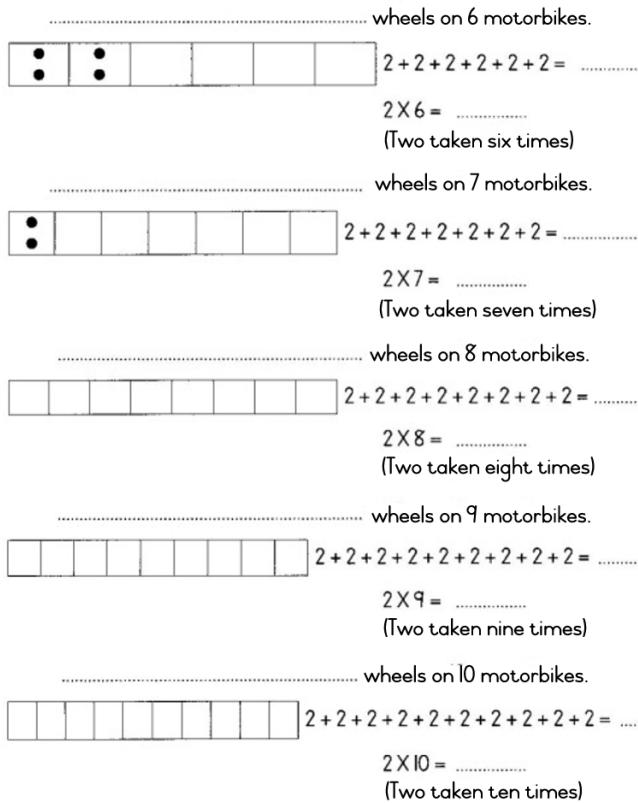
Figure 3.10

---

LO 1.9.2	<input type="text"/>
----------	----------------------

Table 3.8

- Complete:

**Figure 3.11**

LO 1.9.2	
----------	--

**Table 3.9**

- Complete:

$$\begin{aligned}
 2 + 2 + 2 + 2 + 2 + 2 &= \dots \text{ so, } 2 \times 6 = \dots \\
 2 + 2 + 2 + 2 + 2 + 2 + 2 &= \dots \text{ so, } 2 \times 7 = \dots \\
 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 &= \dots \text{ so, } 2 \times 8 = \dots \\
 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 &= \dots \text{ so, } 2 \times 9 = \dots \\
 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 &= \dots \text{ so, } 2 \times 10 = \dots
 \end{aligned}$$

**Figure 3.12**

- Match the correct riders to the correct motorbikes.

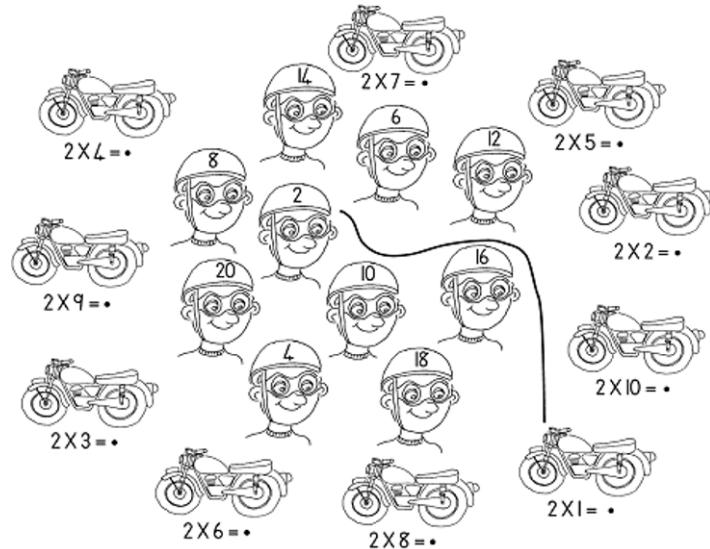


Figure 3.13

LO 1.9.2

Table 3.10

- Look and learn.

One taken twice is the same as one doubled.



$$1 \times 2 = 2$$

$$(1 + 1 = 2)$$

Two taken twice is the same as two doubled.



$$2 \times 2 = 4$$

$$(2 + 2 = 4)$$

Figure 3.14

- So

$$\begin{array}{ll} 3 + 3 = \dots & \text{and } 3 \times 2 = \dots \\ 4 + 4 = \dots & \text{and } 4 \times 2 = \dots \\ 5 + 5 = \dots & \text{and } 5 \times 2 = \dots \\ 6 + 6 = \dots & \text{and } 6 \times 2 = \dots \\ 7 + 7 = \dots & \text{and } 7 \times 2 = \dots \\ 8 + 8 = \dots & \text{and } 8 \times 2 = \dots \\ 9 + 9 = \dots & \text{and } 9 \times 2 = \dots \\ 10 + 10 = \dots & \text{and } 10 \times 2 = \dots \end{array}$$

**Figure 3.15**

- Double:

---

4: ..... 6: ..... 8: ..... 10: ..... 9: .....

**Figure 3.16**

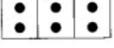

---

LO 1.9.2	LO 1.10.2	
----------	-----------	--

**Table 3.11**

- Look and learn.

---

	$2 \times 1 = 2$ can also be written as
	$1 \times 2 = 2$ (One taken twice)
	$2 \times 3 = 6$ can also be written as
	$3 \times 2 = 6$ (Three taken twice)

**Figure 3.17**

- Draw:

---

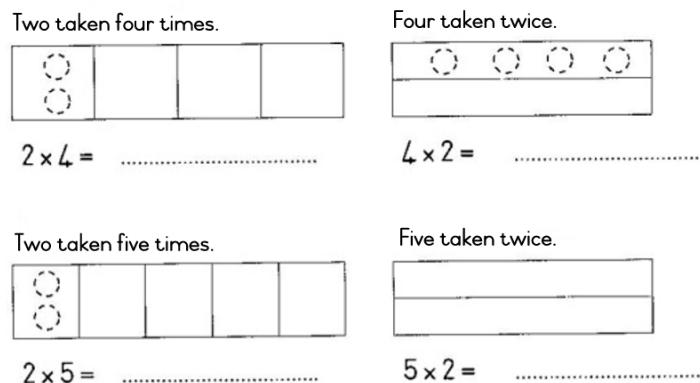


Figure 3.18

- So

---

$2 \times 6 = \dots$	$6 \times 2 = \dots$
$2 \times 7 = \dots$	$7 \times 2 = \dots$
$2 \times 8 = \dots$	$8 \times 2 = \dots$
$2 \times 9 = \dots$	$9 \times 2 = \dots$

Figure 3.19

LO 1.9.2	
----------	--

Table 3.12

### 3.2.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

1.10.2 doubling and halving,

### 3.3 All about 16<sup>3</sup>

#### 3.3.1 MATHEMATICS

##### 3.3.2 Mathematics in the world around us

##### 3.3.3 EDUCATOR SECTION

##### 3.3.4 Memorandum

##### 3.3.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;

6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;

7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- A healthy environment: Many vehicles use our roads and these are a source of pollution. Discuss. Safety on the roads is essential. Learners must obey road rules and safety measures taken by the school and road authorities. Discuss how learners can be safe while walking / travelling to and from school.
- Plants and flowers make our environment pretty and attractive. Learners must know these should be protected and not destroyed.
- Inclusively: Man, animals and plants all rely on one another to survive. Discuss this statement and give examples.
  
- Vehicles are essentially part of the learner's experience and through these activities of counting to 150, a graph determining distances and vehicles, and the extension of bonds of 16, are used.
- Up to 50 objects are estimated, grouped and counted.
- The multiplication tables of 2 is introduced and addition and subtraction of 6, 7, 8 and 9 included.
- Shapes are identified and sorted by colouring

##### 3.3.6 LEARNER SECTION

##### 3.3.7 Content

###### 3.3.7.1 ACTIVITY: All about sixteen [LO 1.4.1, LO 1.9.1, LO 2.2]

- Each truck can carry sixteen boxes.

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<sup>3</sup>This content is available online at <<http://cnx.org/content/m32503/1.1/>>.

- Complete the number facts of sixteen.

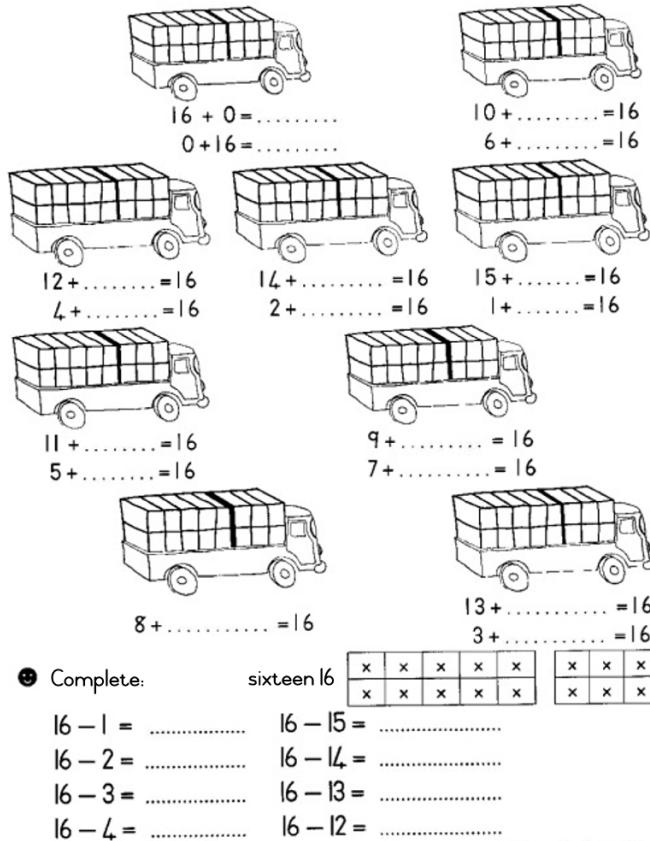


Figure 3.20

LO 1.9.1

Table 3.13

- Colour in the parts and flags that have an answer of 16.

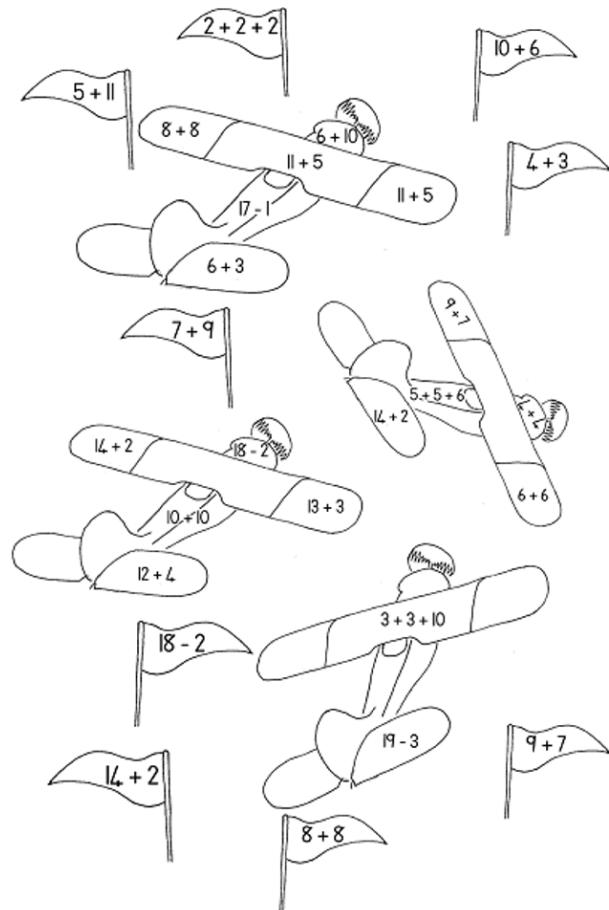


Figure 3.21

LO 1.9.1	
----------	--

Table 3.14

- Write each number sentence in different ways like this

---

$15 + 1 = 16$	$1 + 15 = 16$	$16 - 1 = 15$	$16 - 15 = 1$
$14 + 2 = \dots$	$2 \dots$	$\dots$	$\dots$
$13 + 3 = \dots$	$\dots$	$\dots$	$\dots$
$12 + 4 = \dots$	$\dots$	$\dots$	$\dots$
$11 + 5 = \dots$	$\dots$	$\dots$	$\dots$
$10 + 6 = \dots$	$\dots$	$\dots$	$\dots$
$9 + 7 = \dots$	$\dots$	$\dots$	$\dots$
$8 + 8 = \dots$	$\dots$	$\dots$	$\dots$
$7 + 9 = \dots$	$\dots$	$\dots$	$\dots$
$6 + 10 = \dots$	$\dots$	$\dots$	$\dots$
$5 + 11 = \dots$	$\dots$	$\dots$	$\dots$
$4 + 12 = \dots$	$\dots$	$\dots$	$\dots$
$3 + 13 = \dots$	$\dots$	$\dots$	$\dots$

**Figure 3.22**


---

LO 1.9.1	
----------	--

**Table 3.15**

- Join the dots in the correct order.
- Colour in.

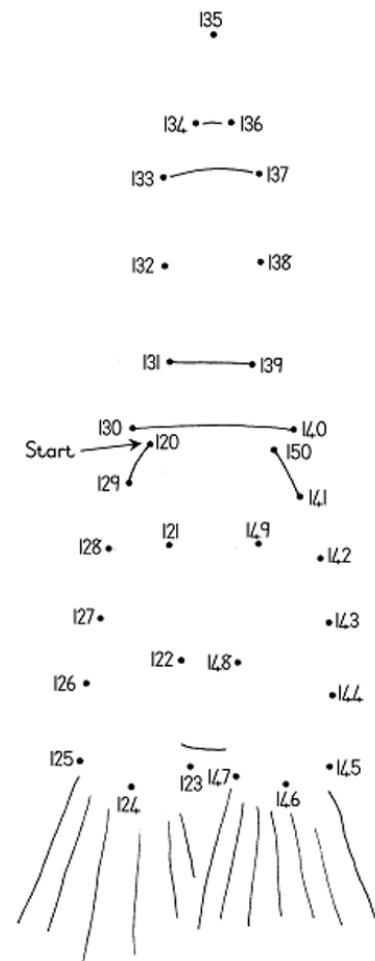


Figure 3.23

LO 1.4.1	
----------	--

Table 3.16

- Complete the number sequences.

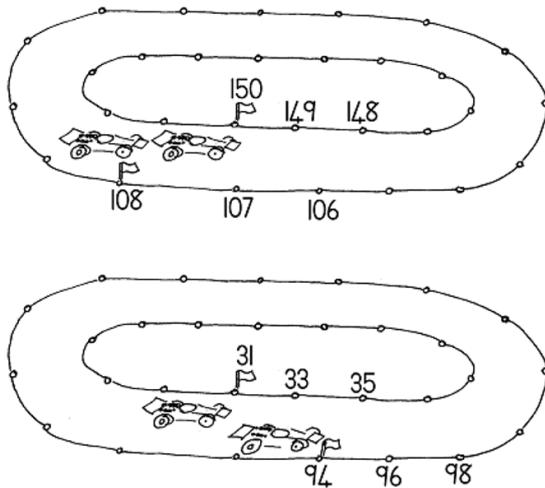


Figure 3.24

- Fill in the missing numbers:

16, 20, ..... , ..... , ..... , ..... , ..... , .....  
 54, 56, ..... , ..... , ..... , ..... , ..... , .....  
 96, 93, ..... , ..... , ..... , ..... , ..... , .....  
 101, 103, ..... , ..... , ..... , ..... , ..... , .....

Figure 3.25

LO 2.2	
--------	--

Table 3.17

### 3.3.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares the following numbers:

1.4.1 whole numbers to at least 2-digit numbers;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

## 3.4 All about $10^4$

### 3.4.1 MATHEMATICS

#### 3.4.2 Mathematics in the world around us

#### 3.4.3 EDUCATOR SECTION

#### 3.4.4 Memorandum

#### 3.4.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- A healthy environment: Many vehicles use our roads and these are a source of pollution. Discuss. Safety on the roads is essential. Learners must obey road rules and safety measures taken by the school and road authorities. Discuss how learners can be safe while walking / travelling to and from school.
- Plants and flowers make our environment pretty and attractive. Learners must know these should be protected and not destroyed.
- Inclusively: Man, animals and plants all rely on one another to survive. Discuss this statement and give examples.
  
- Vehicles are essentially part of the learner's experience and through these activities of counting to 150, a graph determining distances and vehicles, and the extension of bonds of 16, are used.
- Up to 50 objects are estimated, grouped and counted.
- The multiplication tables of 2 is introduced and addition and subtraction of 6, 7, 8 and 9 included.
- Shapes are identified and sorted by colouring

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<sup>4</sup>This content is available online at <<http://cnx.org/content/m32504/1.1/>>.

### 3.4.6 LEARNER SECTION

#### 3.4.7 Content

##### 3.4.7.1 ACTIVITY: All about ten [LO 1.3, LO 1.8.1, LO 1.9.1]

- Sort the numbers and encircle those that add up to 10.

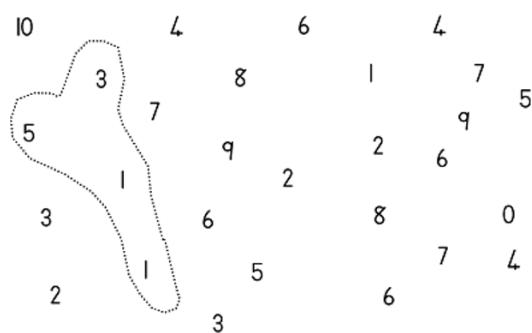


Figure 3.26

- Write the numbers in the circles above as number sentences, e.g.

eg.  $5 + 3 + 1 + 1 = 10$

LO 1.9.1	<input type="text"/>
----------	----------------------

Table 3.18

- Join the numbers to add up to 10.
- Join another number to make 11, e.g. 6 4 1 .
- You may use the numbers more than once.

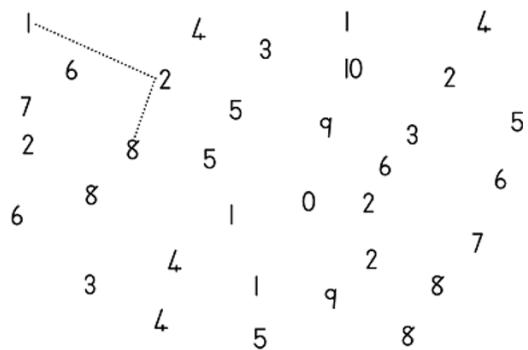


Figure 3.27

- Write the number sentences.

$$8 + 2 + 1 = 11$$

-----  
-----

LO 1.9.1	<input type="text"/>
----------	----------------------

Table 3.19

- 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 are all multiples of 10.

Do these addition sums. Complete to the nearest multiple of 10 first, e.g.

$$\begin{array}{r} 34 + 9 \\ 34 + 6 \longrightarrow 40 + 3 \longrightarrow 43 \\ \text{So, } 34 + 9 = 43. \end{array}$$

Now try these.

$$16 + 8$$

$$16 + \dots \longrightarrow 20 + \dots \longrightarrow \dots$$

$$16 + 8 = \dots$$

$$29 + 7$$

$$29 + \dots$$

$$29 + 7 = \dots$$

$$35 + 8$$

$$35 + \dots$$

$$35 + 8 = \dots$$

$$47 + 7$$

$$47 + \dots$$

$$47 + 7 = \dots$$

Figure 3.28

- Kan jy aan 'n ander manier dink om  $47 + 7$  uit te werk? Wys hoe jy dit doen.

LO 1.8.1	
----------	--

Table 3.20

- Read the story sums.
- Work out the answers.

1. Dad travelled 10 km to work on Monday. On Tuesday he went to work again and then travelled 6 more kilometres to the shop. Altogether he travelled:

$$10 + 10 + 6 = \dots$$

2. Dad does not work weekends. How far does he travel to work during the week from Monday to Friday?

$$\dots + \dots + \dots + \dots + \dots = \dots$$

3. During the weekend, Dad travelled 100 km. How much further did he travel during the weekend than during the week?  $\dots = \dots$

4. Dad takes 12 minutes to travel to work. The bus takes twice as long. How long does the bus take?  $\dots = \dots$

LO 1.8.1	
----------	--

**Table 3.21**

- Complete the columns.

$30 + 6$	36	thirty six
	28	
$40 + 9$		
	63	
		eighty one
	44	
$70 + 7$		
		twenty three
	89	
$50 + 5$		
	40	
		ninety nine

**Table 3.22**

LO 1.3		LO 1.8.1	
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**Table 3.23**

### 3.4.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems involving;

1.8.1 addition and subtraction of whole numbers with at least 2 digits;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving;

1.9.1 addition and subtraction for numbers to at least 20.

## 3.5 All about 13<sup>5</sup>

### 3.5.1 MATHEMATICS

#### 3.5.2 Mathematics in the world around us

#### 3.5.3 EDUCATOR SECTION

#### 3.5.4 Memorandum

#### 3.5.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;

6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;

7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- A healthy environment: Many vehicles use our roads and these are a source of pollution. Discuss. Safety on the roads is essential. Learners must obey road rules and safety measures taken by the school and road authorities. Discuss how learners can be safe while walking / travelling to and from school.
- Plants and flowers make our environment pretty and attractive. Learners must know these should be protected and not destroyed.
- Inclusively: Man, animals and plants all rely on one another to survive. Discuss this statement and give examples.
  
- Vehicles are essentially part of the learner's experience and through these activities of counting to 150, a graph determining distances and vehicles, and the extension of bonds of 16, are used.
- Up to 50 objects are estimated, grouped and counted.
- The multiplication tables of 2 is introduced and addition and subtraction of 6, 7, 8 and 9 included.
- Shapes are identified and sorted by colouring

#### 3.5.6 LEARNER SECTION

#### 3.5.7 Content

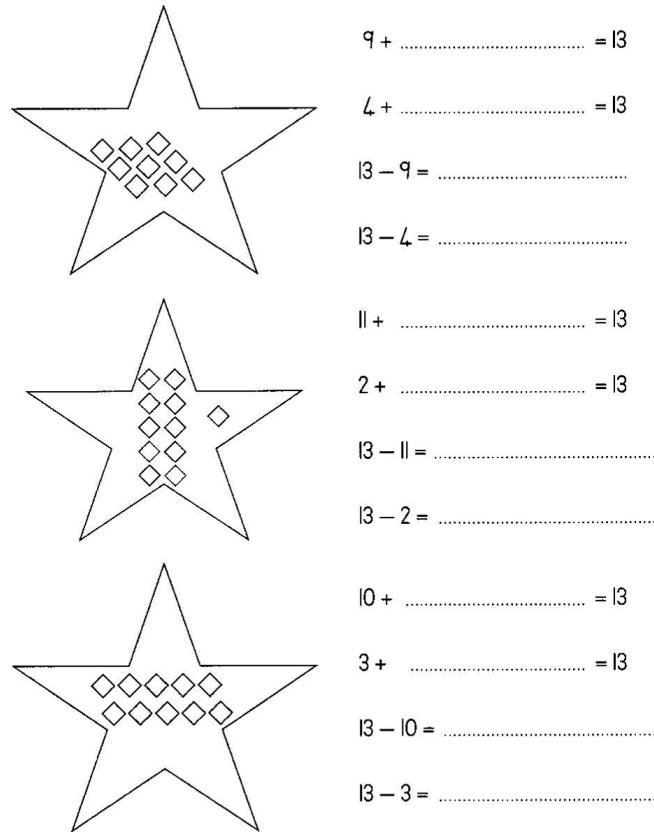
##### 3.5.7.1 ACTIVITY: All about thirteen [LO 1.9.1, LO 5.4, LO 5.5]

- Draw and colour in enough diamonds in each star to make 13.

---

<sup>5</sup>This content is available online at <<http://cnx.org/content/m32505/1.1/>>.

- Complete the number sentences.

**Figure 3.29**


---

LO 1.9.1	
----------	--

**Table 3.24**

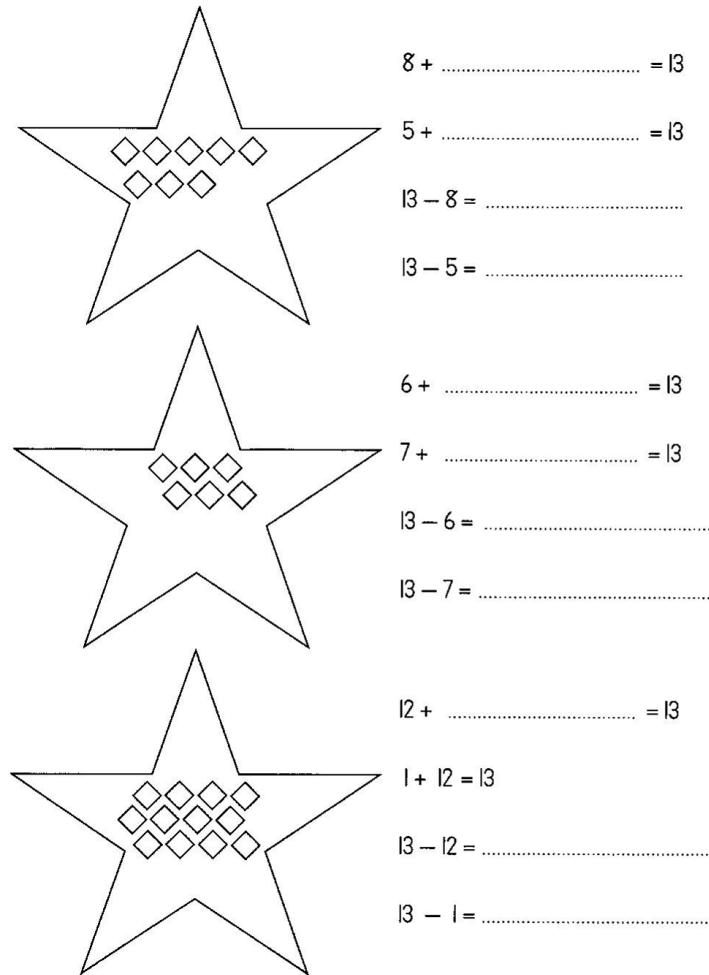


Figure 3.30

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LO 1.9.1	<input type="text"/>
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Table 3.25

Ⓐ I counted these vehicles at the airport.

cars = 14	motorbikes = 3	buses = 2
lorries = 4	combi's = 5	vans = 7
trucks = 6	taxis = 8	land rovers = 9

Ⓑ Complete the graph.

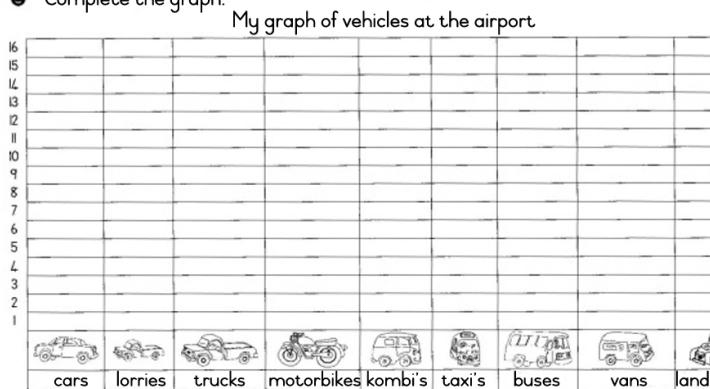


Figure 3.31

LO 5.4

Table 3.26

- Look at your graph
- Answer these questions.

- How many cars were there? \_\_\_\_\_ cars.
- How many land rovers were there? \_\_\_\_\_ land rovers.
- Were there more or less cars than land rovers?  
There were \_\_\_\_\_ cars than land rovers.
- The \_\_\_\_\_ were the least.
- There were \_\_\_\_\_ more trucks than lorries.
- There were \_\_\_\_\_ less taxi's than cars.
- There were \_\_\_\_\_ trucks and lorries altogether.
- There were \_\_\_\_\_ less buses than vans.
- How many motorbikes, kombi's and taxi's were there altogether? \_\_\_\_\_

LO 5.5

Table 3.27

### 3.5.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:  
1.9.1 addition and subtraction for numbers to at least 20;

**Learning Outcome 5:** The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

**Assessment Standard 5.4:** We know this when the learner draws pictures and constructs pictographs that have a 1-1 correspondence between own data and representations;

**Assessment Standard 5.5:** We know this when the learner describes own or a peer's collection of objects, explains how it was sorted, and answers questions about it.

## 3.6 Shapes<sup>6</sup>

### 3.6.1 MATHEMATICS

#### 3.6.2 Mathematics in the world around us

#### 3.6.3 EDUCATOR SECTION

#### 3.6.4 Memorandum

#### 3.6.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

- Integration of Themes:
- A healthy environment: Many vehicles use our roads and these are a source of pollution. Discuss. Safety on the roads is essential. Learners must obey road rules and safety measures taken by the school and road authorities. Discuss how learners can be safe while walking / travelling to and from school.
- Plants and flowers make our environment pretty and attractive. Learners must know these should be protected and not destroyed.
- Inclusively: Man, animals and plants all rely on one another to survive. Discuss this statement and give examples.
- Vehicles are essentially part of the learner's experience and through these activities of counting to 150, a graph determining distances and vehicles, and the extension of bonds of 16, are used.
- Up to 50 objects are estimated, grouped and counted.
- The multiplication tables of 2 is introduced and addition and subtraction of 6, 7, 8 and 9 included.

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<sup>6</sup>This content is available online at <<http://cnx.org/content/m32506/1.1/>>.

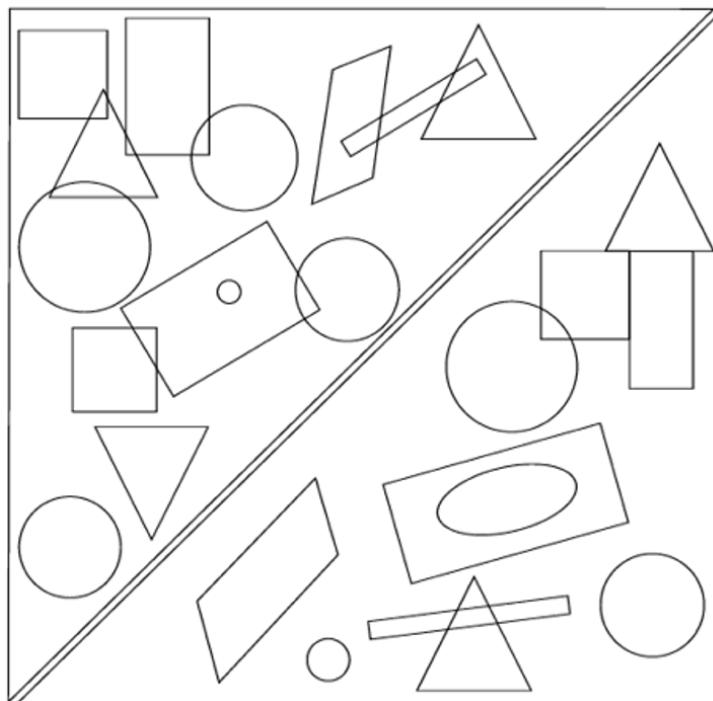
- Shapes are identified and sorted by colouring

### 3.6.6 LEANER SECTION

### 3.6.7 Content

#### 3.6.7.1 ACTIVITY: Shapes [LO 1.9.1, LO 1.9.2, LO 1.10.2, LO 3.1, LO 3.5]

- Find the shapes that are the same in each triangle.
- Colour the triangles that are the same, in the same colour.
- Colour the squares that are the same, in the same colour.



**Figure 3.32**

LO 3.1	LO 3.5	
--------	--------	--

**Table 3.28**

- Join each number sentence to a flower that has the right answer.
- Colour the flower.

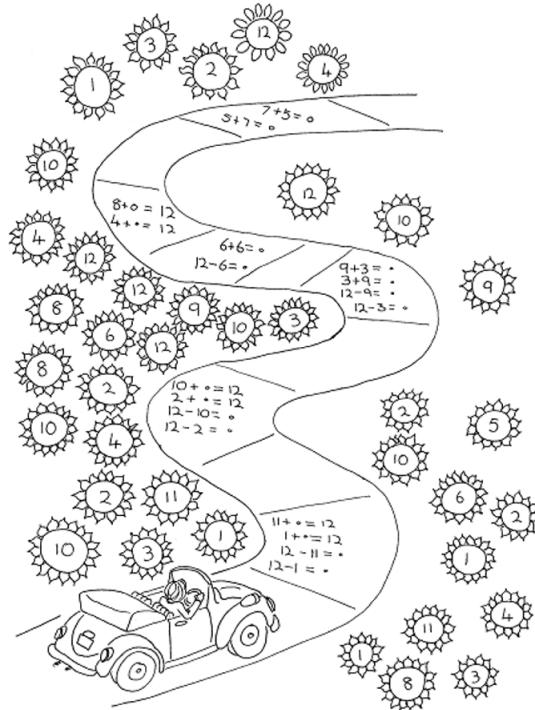


Figure 3.33

LO 1.9.1	
----------	--

Table 3.29

- Count the shapes in each picture.

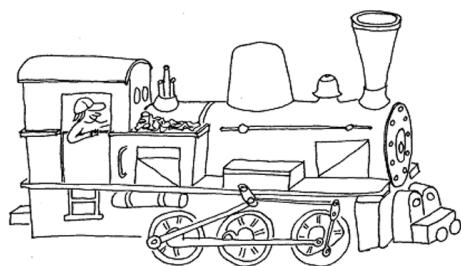
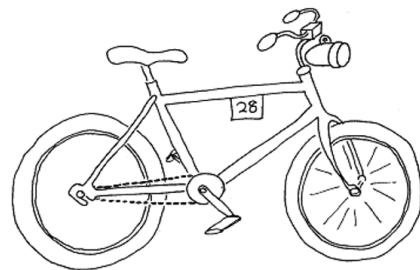


Figure 3.34

circles = \_\_\_\_\_  
 triangles = \_\_\_\_\_  
 squares = \_\_\_\_\_  
 rectangles = \_\_\_\_\_  
 ovals = \_\_\_\_\_

---

**Figure 3.35**

circles = \_\_\_\_\_  
 triangles = \_\_\_\_\_  
 squares = \_\_\_\_\_  
 rectangles = \_\_\_\_\_  
 ovals = \_\_\_\_\_

LO 3.1	<input type="checkbox"/>
--------	--------------------------

**Table 3.30**

- Use these shapes to draw some animals.
- Use as many as you need.
- Give each animal a name.

**Figure 3.36**

LO 3.1	<input type="checkbox"/>	LO 3.5	<input type="checkbox"/>
--------	--------------------------	--------	--------------------------

Table 3.31

- Complete.
- The table of two.

---

X	6	2	4	8	3	9	5
••	12	.....	.....	.....	.....	.....	.....

☺ Double these numbers.

1	6	2	4	8	3	9	5
2	.....	.....	.....	.....	.....	.....	.....

☺ Double these numbers.

7	10	30	40	20	11	50	9
.....	.....	.....	.....	.....	.....	.....	.....

☺ Complete.

$$6 \times 2 = \dots \quad 7 \times 2 = \dots \quad 2 \times 5 = \dots$$

$$9 \times 2 = \dots \quad 2 \times 8 = \dots \quad 10 \times 2 = \dots$$

Figure 3.37

LO 1.9.2	LO 1.10.2	
----------	-----------	--

Table 3.32

### 3.6.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations involving:

1.9.1 addition and subtraction for numbers to at least 20.

1.9.2 multiplication of whole numbers with solutions to at least 20.

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

1.10.2 doubling and halving;

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.1:** We know this when the learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the school environment and in pictures;

**Assessment Standard 3.5:** We know this when the learner recognises three-dimensional objects from different positions.

## 3.7 Fractions with squares<sup>7</sup>

### 3.7.1 MATHEMATICS

#### 3.7.2 Mathematics in the world around us

#### 3.7.3 EDUCATOR SECTION

#### 3.7.4 Memorandum

#### 3.7.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively and Human rights:** Everyone in a class deserves to be challenged. Special creative work should not be given to the bright learners only. Opportunities to extend, to experiment and to discover should be present to everyone in the class. This will encourage learners to try new methods, to learn from their peers and to take risks. Discuss in small groups whether we should be given work to make us think.
- Practical experience with halves and quarters is given.
- Number concept is extended beyond 200 and counting patterns stressed.
- Learners are carefully guided to understand the rounding off of numbers to the nearest multiple.
- Bonds of 17, 18 and 20 are introduced.
- Number values and place values are taught with diagrams.
- The multiplication tables of 10 and 5 are set out.
- Learners can create their own patterns, and games for consolidating number facts are included.
- Using their imagination they can create animals, using shapes.

---

<sup>7</sup>This content is available online at <<http://cnx.org/content/m32473/1.1/>>.

### 3.7.6 LEANER SECTION

#### 3.7.7 Content

##### 3.7.7.1 ACTIVITY: Fractions with squares [LO 1.7, LO 1.10, LO 4.1]

###### 3.7.7.1.1 Fractions with squares

- Take a piece of paper.
- Make sure the sides are the same length.
- This shape is called a square.



Figure 3.38

---

- Fold the square in half. Open the square.
- Cut along the fold.
- There are 2 pieces that are the same size.
- One piece is called a half.
- Two halves make 1 whole.



Figure 3.39

---

- Take another square.
- Fold it in half in a different way, e.g.

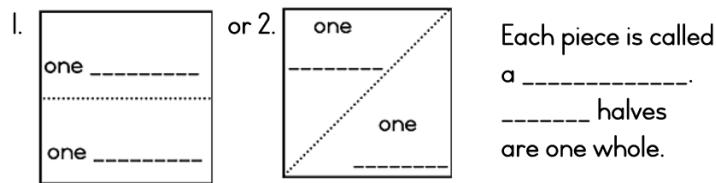


Figure 3.40

LO 1.7	<input type="text"/>
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Table 3.33

### 3.7.7.1.2 Fractions with triangles and rectangles

- Take a piece of paper shaped like a triangle.
- Fold and cut it in half.
- Mark each piece, “one half”.

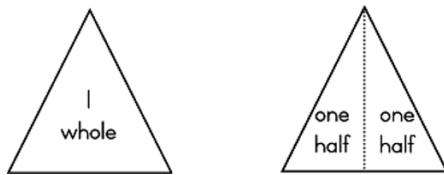


Figure 3.41

---

- Two halves make 1 \_\_\_\_\_
- Do the same with a piece of paper shaped like a rectangle.

---



Figure 3.42

---

- Fold and cut a rectangle in different ways.



Figure 3.43

- Two halves make 1
- Draw circles around the shapes that have 1 half coloured in.



Figure 3.44

LO 1.7	
--------	--

Table 3.34

### 3.7.7.1.3 Fractions with circles

- Take a piece of paper shaped like a circle.
- Fold and cut it in half.
- Mark each piece; “one half.”

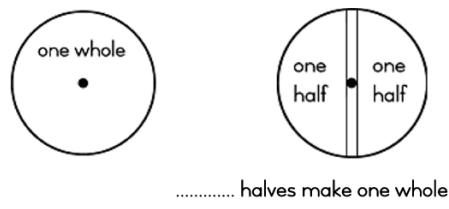
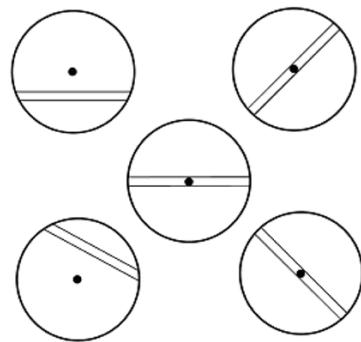


Figure 3.45

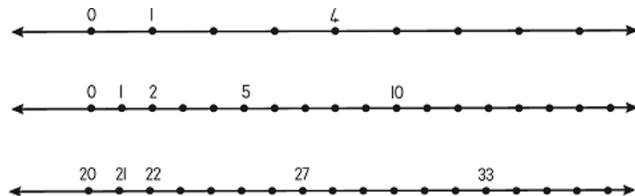
- Colour the circles that have been cut in half. The halves must be the same size.

**Figure 3.46**

LO 1.7	<input type="text"/>
--------	----------------------

**Table 3.35**

- Complete these number lines.

**Figure 3.47**

- Mark halfway between 0 and 10 with an X.

**Figure 3.48**

- Mark halfway between 10 and 20 with an X.



Figure 3.49

- Mark halfway between 20 and 30 with an X.



Figure 3.50

LO 1.10	<input type="text"/>
---------	----------------------

Table 3.36

#### 3.7.7.1.4 Rounding off numbers

- Look!

The truck has travelled past the halfway mark X as far as 8.

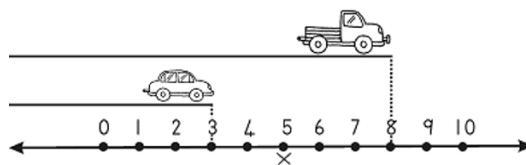


Figure 3.51

- The car has not yet reached the halfway mark X at 5.
- To round off the distance that the truck travelled to the nearest multiple of 10, we can say 8 can be rounded off to 10.

It is nearer to 10 than to 0.

In the same way numbers 5, 6, 7 and 9 can be rounded off to the nearest multiple of 10, which is 10.

But numbers 4, 3, 2, 1 cannot be rounded off to 10 because they are less than halfway to the next multiple of 10.

They are nearer to 0 than to 10.

- To round off these numbers;

14 becomes 10  
 16 becomes 20  
 18 becomes \_\_\_\_\_  
 11 becomes \_\_\_\_\_  
 12 becomes \_\_\_\_\_  
 15 becomes \_\_\_\_\_  
 17 becomes \_\_\_\_\_  
 19 becomes \_\_\_\_\_  
 7 becomes \_\_\_\_\_  
 6 becomes \_\_\_\_\_  
 8 becomes \_\_\_\_\_  
 9 becomes \_\_\_\_\_

LO 1.7	
--------	--

**Table 3.37**

- My alarm clock rang at half past six.
- The long hand was on the six and the short hand halfway between the six and the seven.



half past six



six o'clock

**Figure 3.52**

The long hand had travelled halfway around the clock, from 12 to 6.

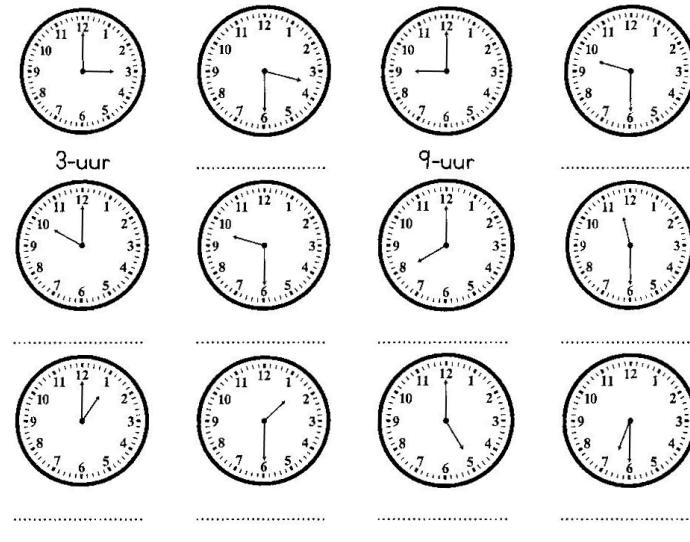


Figure 3.53

Complete the times on these clocks.

LO 4.1	<input type="text"/>
--------	----------------------

Table 3.38

### 3.7.7.1.5 Fractions with shapes

- Take a square piece of paper.
- Fold it in half.
- Fold it in half again.

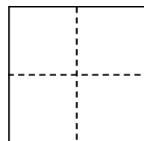


Figure 3.54

---

- Open the paper and cut along the folds.
- How many pieces are there? \_\_\_\_\_ pieces.

- Each part is called “one quarter,” which means one of 4 parts.



Figure 3.55

- Colour in one quarter.



Figure 3.56

- How many quarters will be equal to one half?
- Colour in the quarters to show one half.



Figure 3.57

- \_\_\_\_\_ quarters make one half.
- \_\_\_\_\_ quarters make one whole.
- Look!
- Shapes that are divided into 4 equal parts have been divided into quarters.
- Colour in one quarter in each of these shapes.

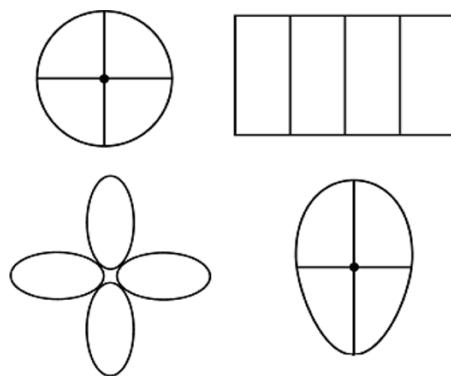


Figure 3.58

- Colour in 2 quarters.

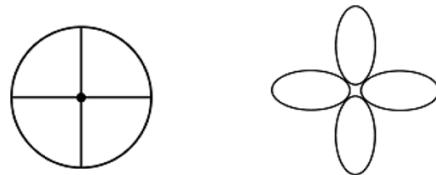


Figure 3.59

- 2 quarters are equal to \_\_\_\_\_
- 4 quarters are equal to \_\_\_\_\_

LO 1.7	<input type="text"/>
--------	----------------------

Table 3.39

### 3.7.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.7:** We know this when the learner solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (eg.  $\frac{1}{4}$ );

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;
- 1.10.2 doubling and halving;
- 1.10.3 using concrete apparatus (e.g. counters);

1.10.4 number-lines.

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.1:** We know this when the learner reads analogue and digital clock time in hours and minutes.

## 3.8 All about tens and twenties<sup>8</sup>

### 3.8.1 MATHEMATICS

#### 3.8.2 Mathematics in the world around us

#### 3.8.3 EDUCATOR SECTION

#### 3.8.4 Memorandum

#### 3.8.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

Integration of Themes:

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- The multiplication tables of 10 and 5 are set out.
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- Using their imagination they can create animals, using shapes.

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<sup>8</sup>This content is available online at <<http://cnx.org/content/m32475/1.1/>>.

### 3.8.6 LEANER SECTION

#### 3.8.7 Content

##### 3.8.7.1 ACTIVITY: All about tens and twenties [LO 1.9]

###### 3.8.7.1.1 Make tens

- Add vertically.
- Find the answers by first making tens.

---

+	3 9 6 3 1 3 7 3 4	6 5 6 2 6 4 8 5 6	1 9 8 9 5 9 9 5 2	3 1 2 7 8 8 8 9 8

Figure 3.60

---

- Write each number sentence like this \_\_\_\_\_

---

$$7 + 3 \rightarrow 10 + 3 \rightarrow \bullet$$

Figure 3.61

---

LO 1.9	
--------	--

Table 3.40

---

###### 3.8.7.1.2 Make twenties

- Add vertically.
- Find the answers by first making twenties.

---

+		<table border="1"><tr><td>16</td><td>15</td><td>19</td></tr><tr><td>4</td><td>5</td><td>4</td></tr><tr><td>4</td><td>4</td><td>1</td></tr><tr><td> </td><td> </td><td> </td></tr></table>	16	15	19	4	5	4	4	4	1				<table border="1"><tr><td>6</td><td>11</td><td>17</td></tr><tr><td>2</td><td>9</td><td>6</td></tr><tr><td>18</td><td>6</td><td>3</td></tr><tr><td> </td><td> </td><td> </td></tr></table>	6	11	17	2	9	6	18	6	3				<table border="1"><tr><td>14</td><td>7</td><td>12</td></tr><tr><td>3</td><td>13</td><td>3</td></tr><tr><td>6</td><td>3</td><td>8</td></tr><tr><td> </td><td> </td><td> </td></tr></table>	14	7	12	3	13	3	6	3	8			
16	15	19																																						
4	5	4																																						
4	4	1																																						
6	11	17																																						
2	9	6																																						
18	6	3																																						
14	7	12																																						
3	13	3																																						
6	3	8																																						

Figure 3.62

---

- Write each number sentence like this \_\_\_\_\_

---

$$16 + 4 \rightarrow 20 + 4 \rightarrow \bullet$$

Figure 3.63

---

LO 1.9	
--------	--

Table 3.41

### 3.8.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations.

## 3.9 All about 17<sup>9</sup>

### 3.9.1 MATHEMATICS

#### 3.9.2 Mathematics in the world around us

#### 3.9.3 EDUCATOR SECTION

#### 3.9.4 Memorandum

#### 3.9.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;

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<sup>9</sup>This content is available online at <<http://cnx.org/content/m32476/1.1/>>.

3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
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Integration of Themes:

- **Inclusively and Human rights:** Everyone in a class deserves to be challenged. Special creative work should not be given to the bright learners only. Opportunities to extend, to experiment and to discover should be present to everyone in the class. This will encourage learners to try new methods, to learn from their peers and to take risks. Discuss in small groups whether we should be given work to make us think.
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- The multiplication tables of 10 and 5 are set out.
- Learners can create their own patterns, and games for consolidating number facts are included.
- Using their imagination they can create animals, using shapes.

### 3.9.6 LEARNER SECTION

#### 3.9.7 Content

ACTIVITY: All about seventeen [LO 1.8, LO 1.9, LO 1.10]

##### 3.9.7.1 All about seventeen

- First make a ten, then add seven, e.g.

$$\begin{array}{r} \text{10} \\ \text{9} + \underbrace{\text{1} + \text{7}}_{\text{8}} = \text{17} \end{array}$$

$$\text{So } 9 + 8 = 17$$

**Figure 3.64**

- Do the same with . . .

---

$$\begin{array}{l}
 \text{10} \\
 \overbrace{8 + \bullet + 7} = 17 \quad \text{so} \quad 8 + \bullet = 17 \\
 7 + \bullet + 7 = 17 \quad \text{so} \quad 7 + \bullet = 17 \\
 6 + \bullet + 7 = 17 \quad \text{so} \quad 6 + \bullet = 17 \\
 5 + \bullet + 7 = 17 \quad \text{so} \quad 5 + \bullet = 17 \\
 4 + \bullet + 7 = 17 \quad \text{so} \quad 4 + \bullet = 17 \\
 3 + \bullet + 7 = 17 \quad \text{so} \quad 3 + \bullet = 17 \\
 2 + \bullet + 7 = 17 \quad \text{so} \quad 2 + \bullet = 17 \\
 1 + \bullet + 7 = 17 \quad \text{so} \quad 1 + \bullet = 17
 \end{array}$$

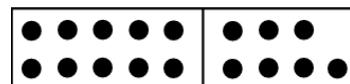
**Figure 3.65**

LO 1.9	<input type="text"/>
--------	----------------------

**Table 3.42**

- Complete the number sentences to discover the number facts of 17.
- Let this box help you.

---

**Figure 3.66**

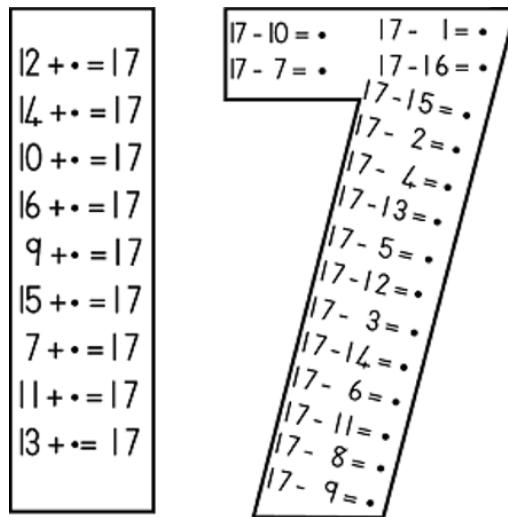


Figure 3.67

- Write the number facts of 17 like this:

$10 + 7 = 17$	$7 + 10 = 17$	$17 - 10 = 7$	$17 - 7 = 10$
$11 + 6 = 17$	.....	.....	.....
$12 + 5 = 17$	.....	.....	.....
$13 + 4 = 17$	.....	.....	.....
$14 + 3 = 17$	.....	.....	.....
$15 + 2 = 17$	.....	.....	.....
$16 + 1 = 17$	.....	.....	.....
$9 + 8 = 17$	.....	.....	.....

Figure 3.68

LO 1.10	
---------	--

Table 3.43

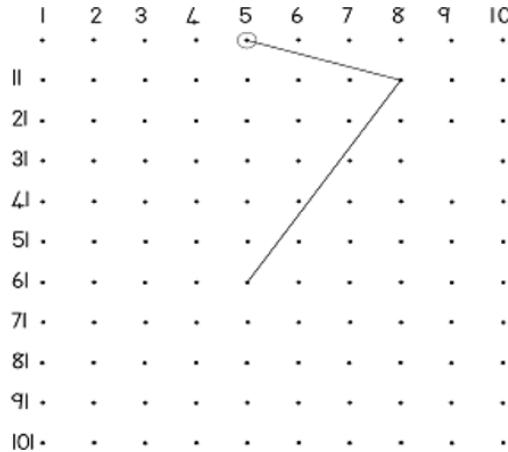


Figure 3.69

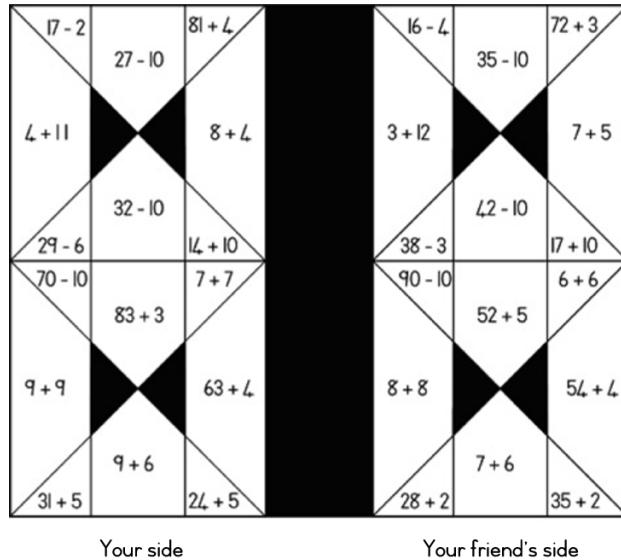
- Complete the number sentences.
- Find the answer on the grid. Draw a circle around the answer on the grid.
- Join the dots that have circles. Begin at 5.
- Colour in the picture.

1.  $95 - 90 = 5$
2.  $20 - 5 =$
3.  $30 - 5 =$
4.  $40 - 5 =$
5.  $50 - 5 =$
6.  $60 - 5 =$
7.  $66 - 2 =$
8.  $66 - 3 =$
9.  $64 - 2 =$
10.  $86 - 3 =$
11.  $80 + 4 =$
12.  $81 + 4 =$
13.  $76 + 10 =$
14.  $80 + 7 =$
15.  $87 + 1 =$
16.  $66 + 3 =$
17.  $66 + 2 =$
18.  $60 + 7 =$
19.  $62 + 4 =$
20.  $63 + 2 =$

LO 1.8	
--------	--

**Table 3.44**

- A game to play with a friend.
- Take turns to say the answer to a number sentence on your side.
- Colour in the block if your answer is correct.
- The winner is the one who has coloured in all the blocks first.

**Figure 3.70**

LO 1.8	
--------	--

**Table 3.45**

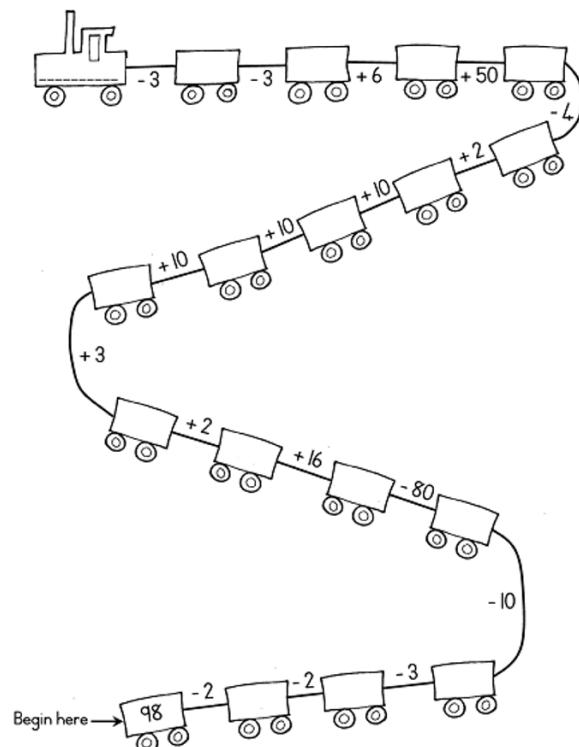


Figure 3.71

LO 1.8	
--------	--

Table 3.46

### 3.9.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

1.10.1 building up and breaking down numbers;

1.10.2 doubling and halving;

1.10.3 using concrete apparatus (e.g. counters);

1.10.4 number-lines.

## 3.10 All about 18<sup>10</sup>

### 3.10.1 MATHEMATICS

#### 3.10.2 Mathematics in the world around us

#### 3.10.3 EDUCATOR SECTION

#### 3.10.4 Memorandum

#### 3.10.5 Critical and developmental outcomes:

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- Using their imagination they can create animals, using shapes.

### 3.10.6 LEARNER SECTION

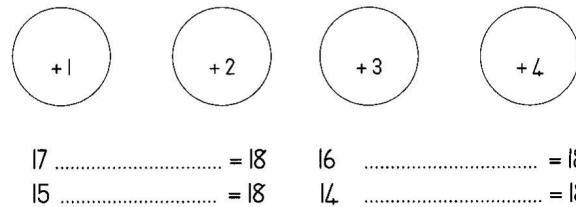
#### 3.10.7 Content

ACTIVITY: All about eighteen [LO 1.4, LO 1.5, LO 1.9, LO 2.2]

- Add 1, 2, 3, or 4 to make 18.

---

<sup>10</sup>This content is available online at <<http://cnx.org/content/m32477/1.1/>>.

**Figure 3.72**


---

- Now write the number sentences of 18 the other way, e.g.

---

$\overset{\curvearrowleft}{10} + 8 = 18$ 17 + ..... = 18 16 + ..... = 18 15 + ..... = 18 14 + ..... = 18	8 + 10 = 18 ..... + 17 = 18 ..... + 16 = 18 ..... + 15 = 18 ..... + 14 = 18
--	---

**Figure 3.73**


---

- Complete:

$$13 + 3 \dots + \dots = 18 \text{ so } 13 + \dots = 18$$

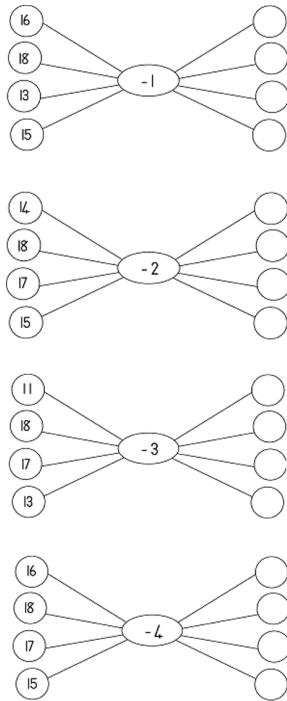
$$12 + 2 \dots + \dots = 18 \text{ so } 12 + \dots = 18$$

LO 1.9	
--------	--

**Table 3.47**


---

- Complete:



**Figure 3.74**

---

LO 1.9	<input type="text"/>
--------	----------------------

**Table 3.48**

### 3.10.7.1 A game about eighteen

- Load the truck and finish the journey.
- Follow the arrows to the different places.

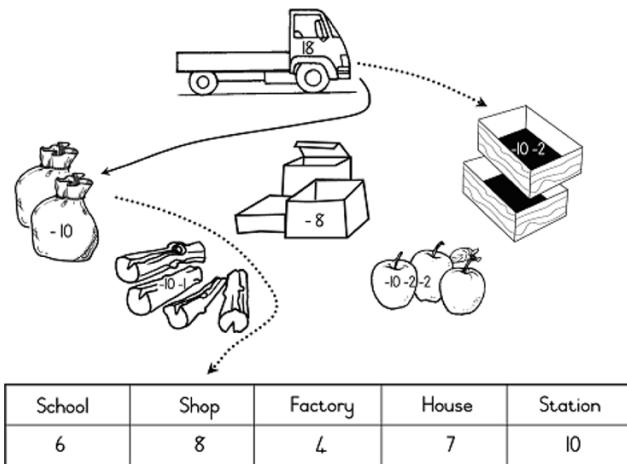


Figure 3.75

- Complete:

$$\begin{aligned}
 18 - 10 &= \text{_____} \\
 18 - 10 - 1 &= \text{_____} \\
 18 - 2 - 2 &= \text{_____} \\
 18 - 8 &= \text{_____} \\
 18 - 10 - 2 &= \text{_____} \\
 18 - 18 &= \text{_____}
 \end{aligned}$$

LO 1.9	<input type="text"/>
--------	----------------------

Table 3.49

### 3.10.7.2 All about eighteen

Add some of these numbers to make 18.

Draw a circle around the numbers you used, e.g.

Write the number sentences.  $10 + 3 + 5 = 18$

$$\begin{array}{r} 10 \\ 0 \quad 9 \\ 2 \quad 3 \quad 8 \\ 1 \quad 5 \quad 4 \end{array}$$

9    8    10

1    4    2

6    3    0

= 18

8    4    9

2    3    7

1    6    4

7    1    9

2    4    0

3    1    10

8    7    8

5    2    3

4    1    1

8    6    2

4    3    4

1    8    0

5    1    3

2    5    7

4    9    5

11    4    8

9    3    5

2    1    0

4    2    4

3    4    0

8    7    2

3    12    3

5    9    8

6    6    3

Figure 3.76

LO 1.9	
--------	--

Table 3.50

- Revise and complete.

---

I0		II	
●●●●	8	△ △	2
●●●●			
●●●			
●●●	6		
●●●●			
●●●●●	9		
●	1		
●●●			
●●●●	7		
●			
●●	3		
●●●			
●●●	5		
●●			
●●	4		
●			
●	2		

I2	
I0	2
7	.....
9	.....
6	.....
8	.....

Figure 3.77

LO 1.9	
--------	--

Table 3.51

- Revise and complete.

---

<b>I3</b>		<b>I4</b>		<b>I5</b>	
10	3	10	4	10	5
12	.....	9	.....	12	.....
9	.....	12	.....	14	.....
11	.....	11	.....	11	.....
8	.....	8	.....	13	.....
6	.....	7	.....	9	.....

<b>I6</b>		<b>I7</b>		<b>I8</b>	
10	6	10	7	10	8
13	.....	2	.....	13	.....
11	.....	4	.....	15	.....
9	.....	11	.....	14	.....
12	.....	5	.....	12	.....
8	.....	9	.....	11	.....

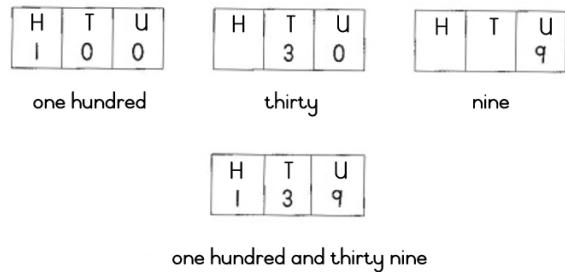
**Figure 3.78**


---

LO 1.9	<input type="text"/>
--------	----------------------

**Table 3.52**

- Look! Read the numbers and their place values.

**Figure 3.79**


---

- Complete the place values of,

the 4 in 14 \_\_\_\_\_  
 the 4 in 41 \_\_\_\_\_  
 the 1 in 104 \_\_\_\_\_  
 the 1 in 31 \_\_\_\_\_  
 the 1 in 16 \_\_\_\_\_  
 the 7 in 74 \_\_\_\_\_  
 the 7 in 57 \_\_\_\_\_  
 the 9 in 19 \_\_\_\_\_  
 the 9 in 91 \_\_\_\_\_

LO 1.5	
--------	--

**Table 3.53**

- Arrange these series of numbers from the least to the most.

---

A.	80,	18,	108,	8,
.....	.....	.....	.....	.....
B.	204,	26,	129,	2,
.....	.....	.....	.....	.....
C.	94,	19,	109,	99,
.....	.....	.....	.....	.....

**Figure 3.80**

- Arrange these series of numbers from the most to the least.

---

A. 80,      18,      108,      8,      88.

.....      .....

B. 204,      26,      129,      2,      22.

.....      .....

C. 94,      19,      109,      99,      9.

.....      .....

Figure 3.81

---

LO 1.4	<input type="text"/>
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Table 3.54

- Complete the counting patterns on each wheel.
- Follow the arrows.

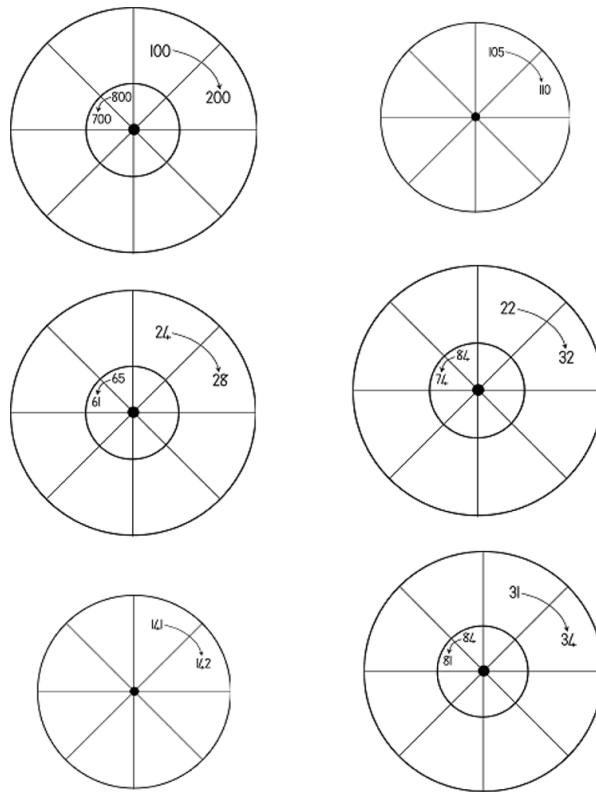


Figure 3.82

LO 2.2	
--------	--

Table 3.55

### 3.10.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares numbers;

**Assessment Standard 1.5:** We know this when the learner recognises the place value of digits in whole numbers to at least 2-digit numbers;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

## 3.11 Work with squares and circles<sup>11</sup>

### 3.11.1 MATHEMATICS

#### 3.11.2 Mathematics in the world around us

#### 3.11.3 EDUCATOR SECTION

#### 3.11.4 Memorandum

#### 3.11.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively and Human rights:** Everyone in a class deserves to be challenged. Special creative work should not be given to the bright learners only. Opportunities to extend, to experiment and to discover should be present to everyone in the class. This will encourage learners to try new methods, to learn from their peers and to take risks. Discuss in small groups whether we should be given work to make us think.
- Practical experience with halves and quarters is given.
- Number concept is extended beyond 200 and counting patterns stressed.
- Learners are carefully guided to understand the rounding off of numbers to the nearest multiple.
- Bonds of 17, 18 and 20 are introduced.
- Number values and place values are taught with diagrams.
- The multiplication tables of 10 and 5 are set out.
- Learners can create their own patterns, and games for consolidating number facts are included.
- Using their imagination they can create animals, using shapes.

### 3.11.6 LEARNER SECTION

#### 3.11.7 Content

ACTIVITY: Work with squares and circles[LO 1.2, LO 1.3, LO 1.9, LO 2.2]

- Add up all the numbers in the square to make the total in the circle.
- Complete the squares.

---

<sup>11</sup>This content is available online at <<http://cnx.org/content/m32478/1.1/>>.

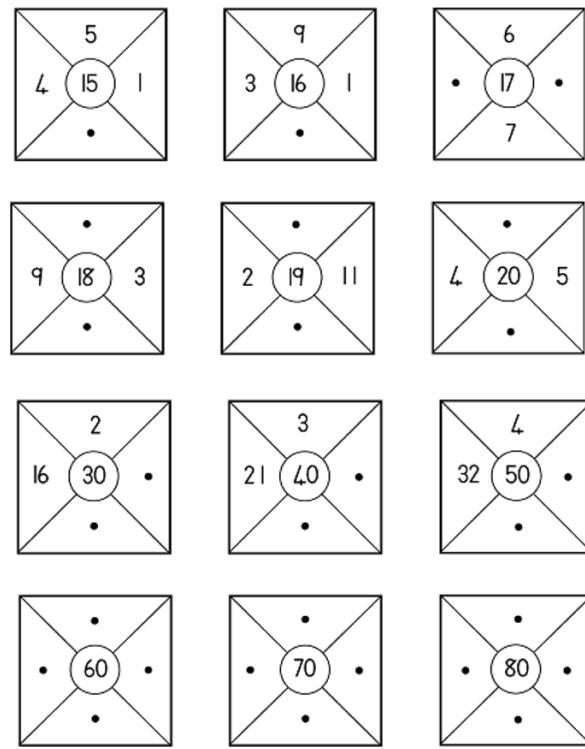


Figure 3.83

LO 1.9	
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Table 3.56

- Add diagonally
- Each diagonal must have the same total.
- Use different numbers.

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Figure 3.84

LO 1.9	
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Table 3.57

- Complete the number sequence in each block.

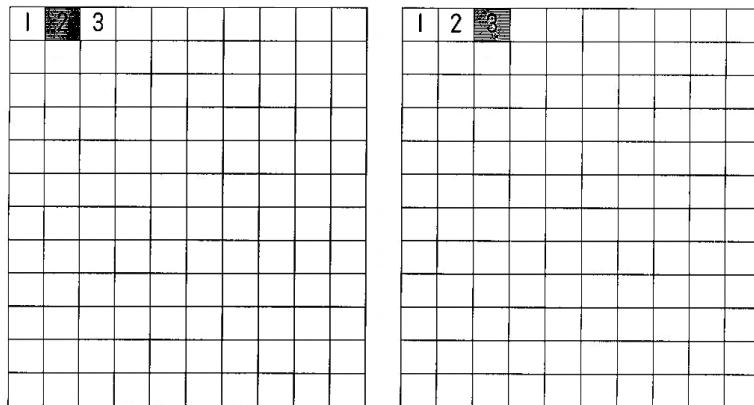


Figure 3.85

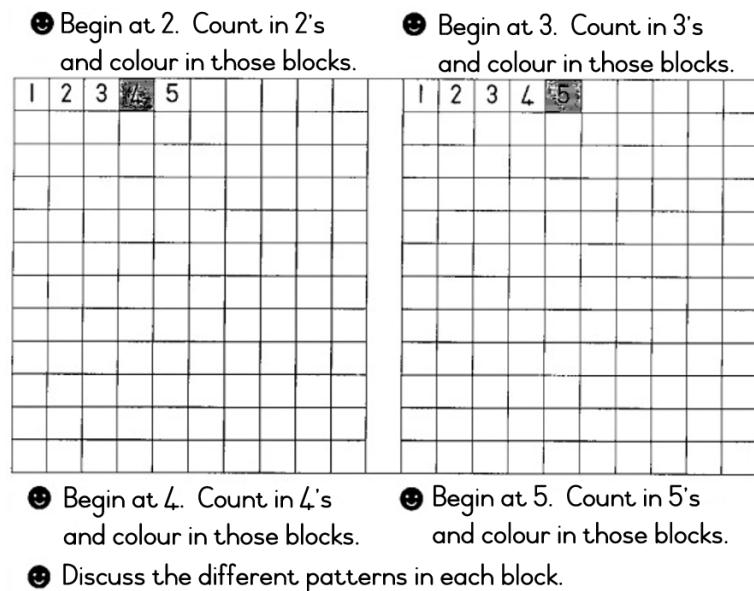


Figure 3.86

LO 1.2	LO 2.2	
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Table 3.58

- Complete the number block.

101	102							
								180

Table 3.59

- Count in ones from 101 to 180.
- Count backwards from 180 to 101.
- Count in tens from 110 to 180.
- Count backwards in tens from 180 to 110.
- Count in fives from 105 to 180.
- Count backwards in fives from 180 to 105.
- Count in twos from 102 to 180.
- Count backwards in twos from 180 to 102.
  
- Complete:

38 thirty \_\_\_\_\_  
 27 \_\_\_\_\_  
 49 \_\_\_\_\_  
 88 \_\_\_\_\_

LO 1.2		LO 1.3		LO 2.2	
--------	--	--------	--	--------	--

Table 3.60

### 3.11.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations.

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

## 3.12 Multiples of 5 and 10<sup>12</sup>

### 3.12.1 MATHEMATICS

#### 3.12.2 Mathematics in the world around us

#### 3.12.3 EDUCATOR SECTION

#### 3.12.4 Memorandum

#### 3.12.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively and Human rights:** Everyone in a class deserves to be challenged. Special creative work should not be given to the bright learners only. Opportunities to extend, to experiment and to discover should be present to everyone in the class. This will encourage learners to try new methods, to learn from their peers and to take risks. Discuss in small groups whether we should be given work to make us think.
- Practical experience with halves and quarters is given.
- Number concept is extended beyond 200 and counting patterns stressed.
- Learners are carefully guided to understand the rounding off of numbers to the nearest multiple.
- Bonds of 17, 18 and 20 are introduced.
- Number values and place values are taught with diagrams.
- The multiplication tables of 10 and 5 are set out.
- Learners can create their own patterns, and games for consolidating number facts are included.
- Using their imagination they can create animals, using shapes.

### 3.12.6 LEARNER SECTION

#### 3.12.7 Content

ACTIVITY: Multiples of five and ten [LO 1.9, LO 2.3, LO 3.1]

---

<sup>12</sup>This content is available online at <<http://cnx.org/content/m32485/1.1/>>.

### 3.12.7.1 Multiples of ten

- Complete:

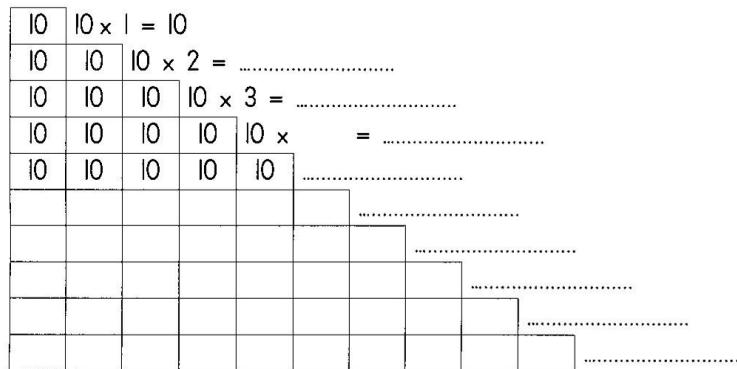


Figure 3.87

- Complete:

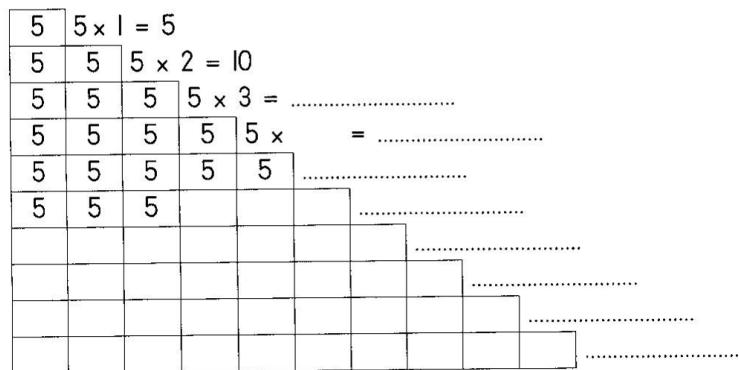
$10 \times 6 = \dots$	$6 \times 10 = \dots$
$10 \times 8 = \dots$	$8 \times \dots = \dots$
$10 \times 10 = \dots$	$\dots$
$10 \times 0 = \dots$	$\dots$
$10 \times 7 = \dots$	$\dots$
$10 \times 5 = \dots$	$\dots$
$10 \times 9 = \dots$	$\dots$

Figure 3.88

LO 1.9	
--------	--

Table 3.61

- Voltooи:

**Figure 3.89**

- Voltooi.

$5 \times 2 = \dots$	$2 \times 5 = \dots$
$5 \times 5 = \dots$	$\dots$
$5 \times 10 = \dots$	$\dots$
$5 \times 3 = \dots$	$\dots$
$5 \times 4 = \dots$	$\dots$
$5 \times 6 = \dots$	$\dots$
$5 \times 8 = \dots$	$\dots$
$5 \times 7 = \dots$	$\dots$

**Figure 3.90**

LO 1.9	<input type="text"/>
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**Table 3.62**

- Use shapes to design a pattern to decorate each of these frames.
- Draw a “photo” of a vehicle in each frame.
- Colour in your shapes.

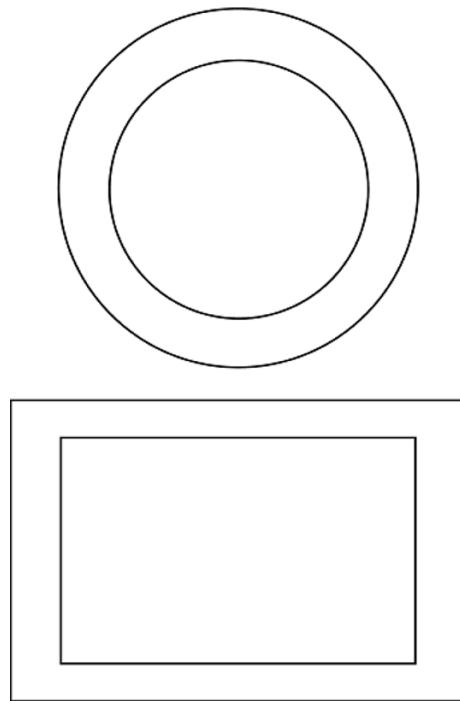


Figure 3.91

LO 2.3	LO 3.1	
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Table 3.63

- Use different shapes like circles, triangles, squares, rectangles, ovals, diamonds, etc., of different sizes to draw vehicles like cars, trucks, lorries, motorbikes, vans, planes, etc.
- Discuss the vehicles you have drawn and the shapes you have used with a friend.
- Colour in your pictures.

LO 3.1	
--------	--

Table 3.64

### 3.12.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.9:** We know this when the learner performs mental calculations.

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.3:** We know this when the learner creates own patterns.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.1:** We know this when the learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the school environment and in pictures.



# Chapter 4

## Term 4

### 4.1 Addition, minus, multiplication and doubling<sup>1</sup>

#### 4.1.1 MATHEMATICS

#### 4.1.2 Mathematics in the world around us

#### 4.1.3 EDUCATOR SECTION

#### 4.1.4 Memorandum

#### 4.1.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively:** We can all learn from one another. Each person's culture can stimulate and enrich another's. Show how this can be done.
- **Human rights:** Learners must respect the differences amongst themselves. Decide how they are different, yet as worthy as their fellow classmates.
- **A healthy environment:** Flowers enhance our environment. Nature them. Healthy foods give us healthy bodies. Discuss healthy, nourishing foods and list them. Do a survey to find out whether your classmates eat healthy foods.

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m32483/1.1/>>.

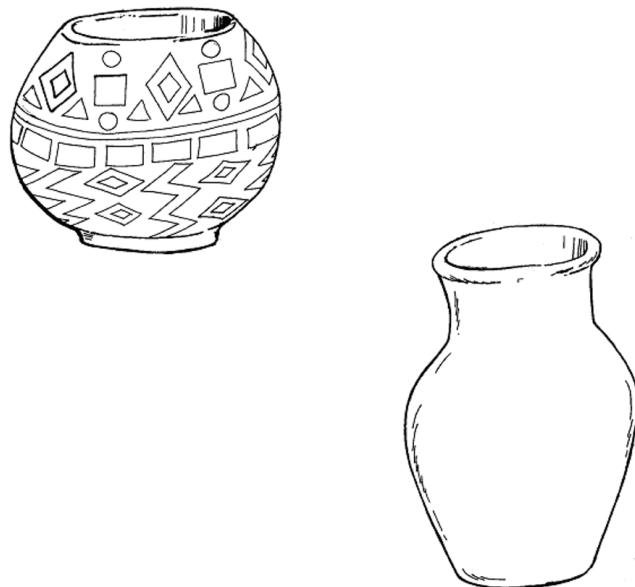
- Number concept and counting to and beyond 200 are practised.
- Even and uneven numbers, rounding off numbers and place values are revised.
- The table of 4 and 3 and sharing activities are included in this module.
- Addition with renaming is practised.
- Doubling with renaming.
- Bonds of 19.
- The following activities have also been included: mass, capacity, fractions and distance.
- Learners are introduced to the objects: pyramids, prisms and cylinders.
- The faces of these 3-D shapes are discussed and compared.

#### 4.1.6 LEARNER SECTION

#### 4.1.7 Content

##### 4.1.7.1 ACTIVITY: Addition, minus, multiplication and doubling [LO 1.2, LO 1.7, LO 1.8, LO 1.9, LO 2.3, LO 2.4, LO 2.5]

- Look at and discuss the patterns on the clay pot.
- Name the different shapes you can see.
- Design your own patterns on the jar.



**Figure 4.1**

LO 2.3		LO 2.4		LO 2.5	
--------	--	--------	--	--------	--

**Table 4.1**

- Complete. How many flowers in the vases?

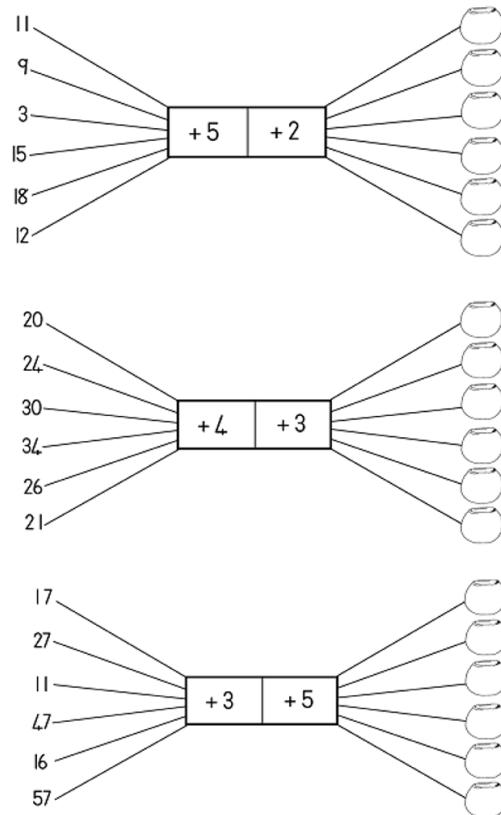


Figure 4.2

---

LO 1.8	<input type="text"/>
--------	----------------------

Table 4.2

- Complete. How many sweets left on the plates?

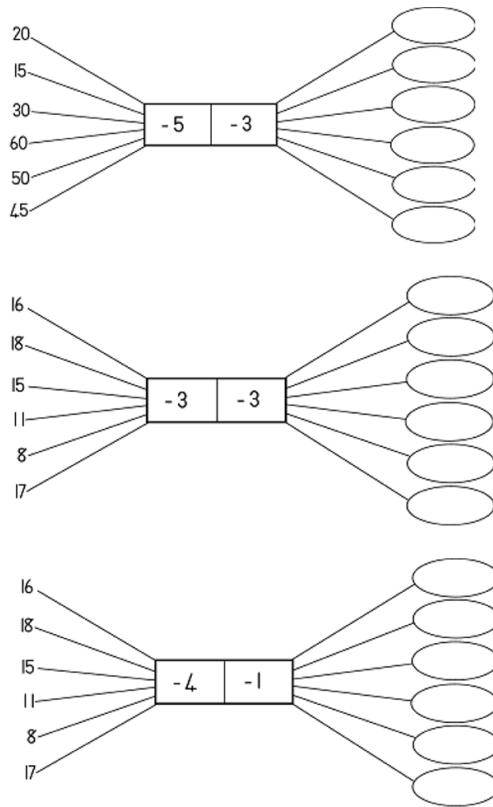


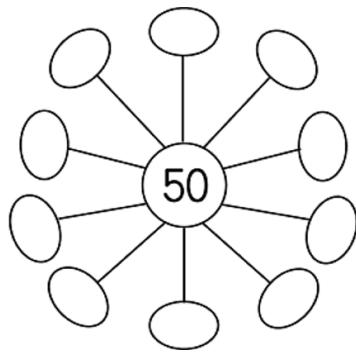
Figure 4.3

---

LO 1.8	<input type="text"/>
--------	----------------------

Table 4.3

- Share out these biscuits amongst 10 children.



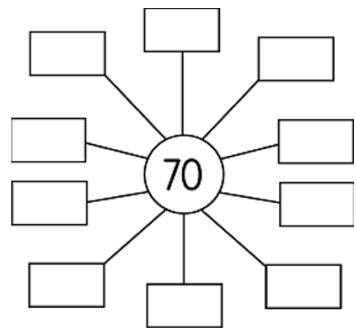
**Figure 4.4**

---

Each child will get \_\_\_\_\_ biscuits.

- Share out these cards amongst 10 girls.

---



**Figure 4.5**

---

Each girl will get \_\_\_\_\_ cards.

- Share out these buttons for 5 shirts.

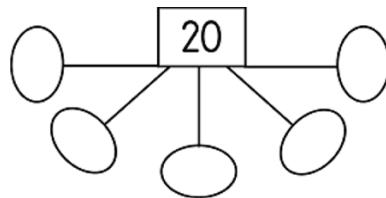


Figure 4.6

---

Each shirt can have \_\_\_\_\_ buttons.

- Share out these flowers for 5 vases.

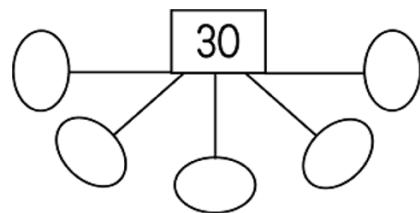


Figure 4.7

Each vase will have \_\_\_\_\_ flowers.

- Share out these pancakes amongst 5 children.

---

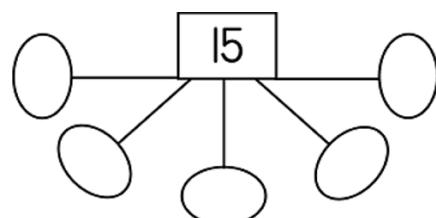


Figure 4.8

---

Each child will get \_\_\_\_\_ pancakes.

LO 1.7	<input type="text"/>
--------	----------------------

**Table 4.4**

- Count in 2's to 20.

0, 2, 4, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 20.

Count:

six two's, so  $2 \times 6 =$  \_\_\_\_\_

four two's, so  $2 \times 4 =$  \_\_\_\_\_

nine two's, so  $2 \times 9 =$  \_\_\_\_\_

seven two's, so  $2 \times$  \_\_\_\_\_ = \_\_\_\_\_

three two's, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

five two's, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

ten two's, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

eight two's, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

LO 1.2	LO 1.9	
--------	--------	--

**Table 4.5**

- Count in 4's to 40.

0, 4, 8, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 40.

Tel : Count: six fours, so  $4 \times 6 =$  \_\_\_\_\_

four fours, so  $4 \times 4 =$  \_\_\_\_\_

nine fours, so  $4 \times 9 =$  \_\_\_\_\_

seven fours, so  $4 \times$  \_\_\_\_\_ = \_\_\_\_\_

three fours, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

five fours, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

ten fours, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

eight fours, so \_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

LO 1.2	LO 1.9	
--------	--------	--

**Table 4.6**

- See who can finish first.

$5 \times 5 =$  \_\_\_\_\_

$4 \times 10 =$  \_\_\_\_\_

$7 \times 5 =$  \_\_\_\_\_

$9 \times 10 =$  \_\_\_\_\_

$8 \times 5 =$  \_\_\_\_\_

$3 \times 10 =$  \_\_\_\_\_

$2 \times 5 =$  \_\_\_\_\_

$1 \times 10 =$  \_\_\_\_\_

$10 \times 5 =$  \_\_\_\_\_

$0 \times 10 =$  \_\_\_\_\_

$0 \times 5 =$  \_\_\_\_\_

$10 \times 10 =$  \_\_\_\_\_

$$\begin{aligned}1 \times 5 &= \underline{\hspace{2cm}} \\2 \times 10 &= \underline{\hspace{2cm}} \\3 \times 5 &= \underline{\hspace{2cm}} \\8 \times 10 &= \underline{\hspace{2cm}} \\9 \times 5 &= \underline{\hspace{2cm}} \\7 \times 10 &= \underline{\hspace{2cm}} \\4 \times 5 &= \underline{\hspace{2cm}} \\5 \times 10 &= \underline{\hspace{2cm}}\end{aligned}$$

(Name) won

LO 1.9	
--------	--

**Table 4.7**

- See who can finish first.

$$\begin{aligned}5 \times 2 &= \underline{\hspace{2cm}} \\4 \times 4 &= \underline{\hspace{2cm}} \\7 \times 2 &= \underline{\hspace{2cm}} \\9 \times 4 &= \underline{\hspace{2cm}} \\8 \times 2 &= \underline{\hspace{2cm}} \\3 \times 4 &= \underline{\hspace{2cm}} \\2 \times 2 &= \underline{\hspace{2cm}} \\1 \times 4 &= \underline{\hspace{2cm}} \\10 \times 2 &= \underline{\hspace{2cm}} \\0 \times 4 &= \underline{\hspace{2cm}} \\0 \times 2 &= \underline{\hspace{2cm}} \\10 \times 4 &= \underline{\hspace{2cm}} \\1 \times 2 &= \underline{\hspace{2cm}} \\2 \times 4 &= \underline{\hspace{2cm}} \\3 \times 2 &= \underline{\hspace{2cm}} \\8 \times 4 &= \underline{\hspace{2cm}} \\9 \times 2 &= \underline{\hspace{2cm}} \\7 \times 4 &= \underline{\hspace{2cm}} \\4 \times 2 &= \underline{\hspace{2cm}} \\5 \times 4 &= \underline{\hspace{2cm}}\end{aligned}$$

- Count backwards from 40 in 4's.

40, 36,       ,       ,       ,       ,       ,       ,       ,       ,       , 0.

- Count backwards from 20 in 2's.

20, 18,       ,       ,       ,       ,       ,       ,       ,       ,       , 0.

LO 1.2		LO 1.9	
--------	--	--------	--

**Table 4.8**

#### 4.1.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards;

**Assessment Standard 1.7:** We know this when the learner solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (eg.  $\frac{1}{4}$ );

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.3:** We know this when the learner creates own patterns;

**Assessment Standard 2.4:** We know this when the learner describes observed patterns;

**Assessment Standard 2.5:** We know this when the learner identifies, describes and copies geometric patterns in natural and cultural artefacts of different cultures and times.

## 4.2 Place value and number sentences<sup>2</sup>

### 4.2.1 MATHEMATICS

#### 4.2.2 Mathematics in the world around us

#### 4.2.3 EDUCATOR SECTION

#### 4.2.4 Memorandum

#### 4.2.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively:** We can all learn from one another. Each person's culture can stimulate and enrich another's. Show how this can be done.
- **Human rights:** Learners must respect the differences amongst themselves. Decide how they are different, yet as worthy as their fellow classmates.

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<sup>2</sup>This content is available online at <<http://cnx.org/content/m32487/1.1/>>.

- **A healthy environment:** Flowers enhance our environment. Name them. Healthy foods give us healthy bodies. Discuss healthy, nourishing foods and list them. Do a survey to find out whether your classmates eat healthy foods.
- Number concept and counting to and beyond 200 are practised.
- Even and uneven numbers, rounding off numbers and place values are revised.
- The table of 4 and 3 and sharing activities are included in this module.
- Addition with renaming is practised.
- Doubling with renaming.
- Bonds of 19.
- The following activities have also been included: mass, capacity, fractions and distance.
- Learners are introduced to the objects: pyramids, prisms and cylinders.
- The faces of these 3-D shapes are discussed and compared.

#### 4.2.6 LEARNER SECTION

#### 4.2.7 Content

##### 4.2.7.1 ACTIVITY: Place values and number sentences [LO 1.5, LO 1.6, LO 1.8, LO 1.10]

- Complete.

$$28 = 2 \text{ tens} + 8 \text{ units}$$

$$\begin{aligned} 54 &= \underline{\hspace{2cm}} \text{ tens} + \underline{\hspace{2cm}} \text{ units} \\ 44 &= \underline{\hspace{2cm}} \\ 83 &= \underline{\hspace{2cm}} \\ 98 &= \underline{\hspace{2cm}} \\ 64 &= \underline{\hspace{2cm}} \\ 32 &= \underline{\hspace{2cm}} \\ 19 &= \underline{\hspace{2cm}} \\ 29 &= \underline{\hspace{2cm}} \\ 48 &= \underline{\hspace{2cm}} \\ 61 &= \underline{\hspace{2cm}} \\ 73 &= \underline{\hspace{2cm}} \end{aligned}$$

- Complete.

$$26 = 20 + 6$$

$$\begin{aligned} 59 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 47 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 82 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 91 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 66 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 39 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 19 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 24 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 45 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 68 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \\ 76 &= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \end{aligned}$$

LO 1.5	LO 1.10	
--------	---------	--

**Table 4.9**

- Herbenoem die getal in die sirkel en voltooi die getalsin, bv.

$$26 + \textcircled{23} \longrightarrow 26 + 20 + 3 \longrightarrow$$

$$46 + 3 \longrightarrow 49$$

$$\text{So } 26 + 23 = 49$$

$$1. \quad 43 + \textcircled{15} \longrightarrow 43 + \dots + \dots \longrightarrow$$

$$\dots + \dots \longrightarrow \dots$$

$$\text{So } 43 + 15 = \dots$$

$$2. \quad 31 + \textcircled{25} \longrightarrow 31 + \dots \longrightarrow$$

$$\dots \longrightarrow \dots$$

$$\text{So } 31 + 25 = \dots$$

$$3. \quad 16 + \textcircled{33} \rightarrow 16 \dots \longrightarrow$$

$$\dots \longrightarrow \dots$$

$$\text{So } \dots$$

**Figure 4.9**

LO 1.8	LO 1.10	
--------	---------	--

**Table 4.10**

- Read these story sums carefully.
- Think! Must you add or must you subtract?

1. Liz spent 31 c and Sally spent 25 c. How much did they spend altogether?

-----  
They spent ----- c altogether.

2. Henry has saved R43. Mo has saved R24 more than Henry. How much has Mo saved?

Mo has saved R \_\_\_\_\_

3. Mike paid R53 for a book and R24 for crayons. How much did he spend altogether?

Mike spends R \_\_\_\_\_ altogether.

4. Des had 62c. He bought marbles for 31c. How much has he left?

Des has \_\_\_\_\_ c left.

5. Sisulu had R98. He spent R33. How much has he left?

Sisulu has R \_\_\_\_\_ left?

6. Tom had 29c. He gave Des 16c. How much has Tom left?

Tom has \_\_\_\_\_ c left.

LO 1.6	LO 1.8	
--------	--------	--

Table 4.11

#### 4.2.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.5:** We know this when the learner recognises the place value of digits in whole numbers to at least 2-digit numbers;

**Assessment Standard 1.6:** We know this when the learner solves money problems involving totals and change in rands and cents, including converting between rands and cents.

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

1.10.1 building up and breaking down numbers;

1.10.2 doubling and halving;

1.10.3 number-lines;

1.10.4 rounding off in tens.

## 4.3 Multiples and sharing<sup>3</sup>

### 4.3.1 MATHEMATICS

#### 4.3.2 Mathematics in the world around us

#### 4.3.3 EDUCATOR SECTION

#### 4.3.4 Memorandum

#### 4.3.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. be culturally and aesthetically sensitive across a range of social contexts;

Integration of Themes:

- **Inclusively:** We can all learn from one another. Each person's culture can stimulate and enrich another's. Show how this can be done.
- **Human rights:** Learners must respect the differences amongst themselves. Decide how they are different, yet as worthy as their fellow classmates.
- **A healthy environment:** Flowers enhance our environment. Nature them. Healthy foods give us healthy bodies. Discuss healthy, nourishing foods and list them. Do a survey to find out whether your classmates eat healthy foods.
  
- Number concept and counting to and beyond 200 are practised.
- Even and uneven numbers, rounding off numbers and place values are revised.
- The table of 4 and 3 and sharing activities are included in this module.
- Addition with renaming is practised.
- Doubling with renaming.
- Bonds of 19.
- The following activities have also been included: mass, capacity, fractions and distance.
- Learners are introduced to the objects: pyramids, prisms and cylinders.
- The faces of these 3-D shapes are discussed and compared.

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<sup>3</sup>This content is available online at <<http://cnx.org/content/m32488/1.1/>>.

### 4.3.6 LEANER SECTION

#### 4.3.7 Content

##### 4.3.7.1 ACTIVITY: Multiples and sharing [LO 1.2, LO 1.7, LO 1.9, LO 5.6]

- Complete:

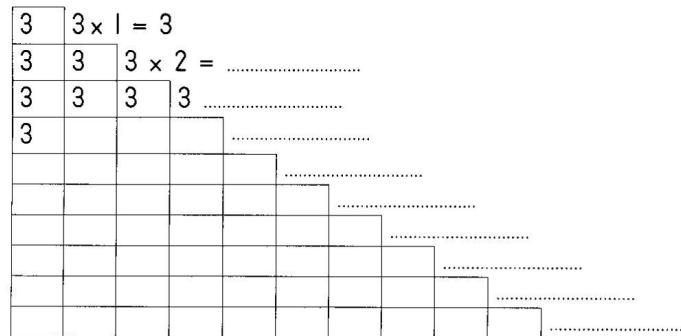


Figure 4.10

- Complete:

$$\begin{aligned}
 3 \times 4 &= \underline{\hspace{2cm}} \\
 3 \times 2 &= \underline{\hspace{2cm}} \\
 3 \times 5 &= \underline{\hspace{2cm}} \\
 3 \times 10 &= \underline{\hspace{2cm}} \\
 3 \times 1 &= \underline{\hspace{2cm}} \\
 3 \times 9 &= \underline{\hspace{2cm}} \\
 3 \times 7 &= \underline{\hspace{2cm}} \\
 4 \times 3 &= \underline{\hspace{2cm}} \\
 2 \times 3 &= \underline{\hspace{2cm}} \\
 5 \times 3 &= \underline{\hspace{2cm}} \\
 10 \times 3 &= \underline{\hspace{2cm}} \\
 1 \times 3 &= \underline{\hspace{2cm}} \\
 9 \times 3 &= \underline{\hspace{2cm}} \\
 7 \times 3 &= \underline{\hspace{2cm}}
 \end{aligned}$$

LO 1.9	
--------	--

Table 4.12

- Tom wants to build tricycles.
- He needs to know how many wheels to buy for:

---

3 tricycles		$3 \times 3 = \dots$
5 tricycles		
4 tricycles		
7 tricycles		
2 tricycles		
8 tricycles		
10 tricycles		
6 tricycles		
9 tricycles		

**Figure 4.11**

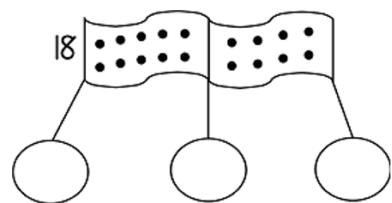

---

LO 1.2	LO 1.9	
--------	--------	--

**Table 4.13**

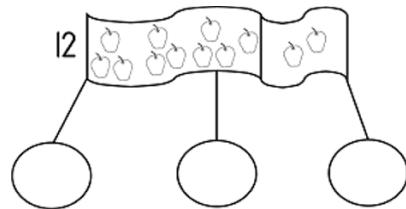
- Share out these smarties into 3 bags.

---

**Figure 4.12**

Each bag has \_\_\_\_\_ smarties.

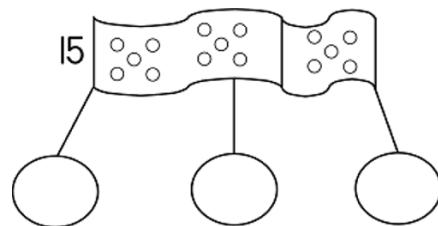
- Share out these apples amongst 3 horses.



**Figure 4.13**

Each horse gets \_\_\_\_\_ apples.

- Share out these marbles amongst 3 boys.



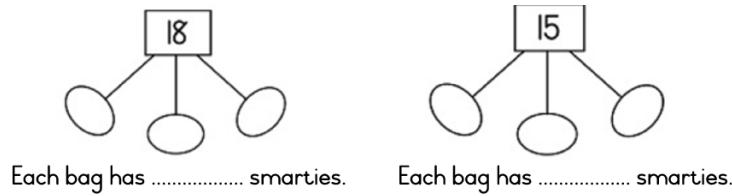
**Figure 4.14**

Each boy gets \_\_\_\_\_ marbles.

LO 1.7	<input type="text"/>
--------	----------------------

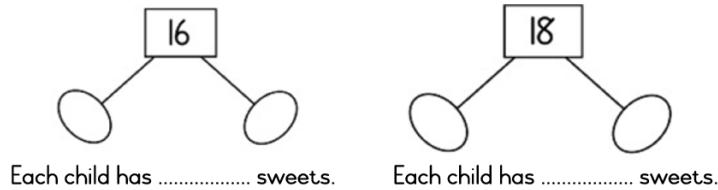
**Table 4.14**

- Share out these smarties into 3 bags.

**Figure 4.15**

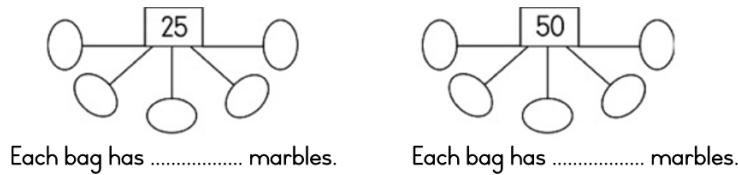

---

- Share out these sweets between 2 children.

**Figure 4.16**


---

- Share out these marbles into 5 bags.

**Figure 4.17**


---

LO 1.7	<input type="text"/>
--------	----------------------

**Table 4.15**


---

- Complete the tables.

Tricycles	1	4	3	5	7	9	8	10	6	2	0
Wheels	3										

**Table 4.16**

Bicycles	1	4	3	5	7	9	8	10	6	2	0
Wheels	2										

**Table 4.17**

Cars	1	4	3	5	7	9	8	10	6	2	0
Wheels	4										

**Table 4.18**

Trucks	1	4	3	5	7	9	8	10	6	2	0
Wheels	10										

**Table 4.19**

3 Tricycles have \_\_\_\_\_ wheels.

9 Tricycles have \_\_\_\_\_ wheels.

3 Bicycles \_\_\_\_\_ wheels.

9 Bicycles \_\_\_\_\_ wheels.

Tricycles	1										
Wheels	3	9	30	12	24	6	15	0	27	18	21

**Table 4.20**

Bicycles	1										
Wheels	3	9	30	12	24	6	15	0	27	18	21

**Table 4.21**

Cars	1										
Wheels	3	9	30	12	24	6	15	0	27	18	21

**Table 4.22**

Trucks	1										
Wheels	3	9	30	12	24	6	15	0	27	18	21

**Table 4.23**

LO 1.2		LO 5.6	
--------	--	--------	--

**Table 4.24**

### 4.3.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards;

**Assessment Standard 1.7:** We know this when the learner solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (eg.  $\frac{1}{4}$ );

**Assessment Standard 1.9:** We know this when the learner performs mental calculations.

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.3:** We know this when the learner creates own patterns.

## 4.4 Mass and distances<sup>4</sup>

### 4.4.1 MATHEMATICS

#### 4.4.2 Mathematics in the world around us

#### 4.4.3 EDUCATOR SECTION

#### 4.4.4 Memorandum

#### 4.4.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively:** We can all learn from one another. Each person's culture can stimulate and enrich another's. Show how this can be done.
- **Human rights:** Learners must respect the differences amongst themselves. Decide how they are different, yet as worthy as their fellow classmates.
- **A healthy environment:** Flowers enhance our environment. Nature them. Healthy foods give us healthy bodies. Discuss healthy, nourishing foods and list them. Do a survey to find out whether your classmates eat healthy foods.
  
- Number concept and counting to and beyond 200 are practised.

---

<sup>4</sup>This content is available online at <<http://cnx.org/content/m32490/1.1/>>.

- Even and uneven numbers, rounding off numbers and place values are revised.
- The table of 4 and 3 and sharing activities are included in this module.
- Addition with renaming is practised.
- Doubling with renaming.
- Bonds of 19.
- The following activities have also been included: mass, capacity, fractions and distance.
- Learners are introduced to the objects: pyramids, prisms and cylinders.
- The faces of these 3-D shapes are discussed and compared.

#### 4.4.6 LEANER SECTION

#### 4.4.7 Content

##### 4.4.7.1 ACTIVITY: Mass and distances [LO 1.2, LO 1.3, LO 1.4, LO 1.8, LO 1.10, LO 2.2, LO 4.3, LO 4.7]

###### 4.4.7.1.1 Tom's backpack

1 lunch box with 4 sandwiches  
 1 ℥ of cool drink  
 3 apples  
 2 chocolates

###### 4.4.7.1.2 Des' backpack

1 lunch box with 6 sandwiches  
 2 ℥ of cool drink  
 1 apple  
 2 chocolates

Answer these questions.

1. \_\_\_\_\_ (name) lunch box has the greater mass. Why?
2. \_\_\_\_\_ (name) lunch box has the smaller mass. Why?
3. One litre bottle can fill 4 mugs.
4. Tom will drink \_\_\_\_\_ mugs of cool drink.
5. Des will drink \_\_\_\_\_ mugs of cool drink.
6. Tom eats one quarter of an apple a day. He will eat a quarter of an apple for \_\_\_\_\_ days.
7. Des eats one half of an apple a day. He will eat half an apple for \_\_\_\_\_ days.
8. The chocolate has 8 squares. They eat 4 squares a day. They each have 4 squares for \_\_\_\_\_ days.

LO 1.4	LO 4.7	
--------	--------	--

Table 4.25

- Complete.

1. Tom and Des walked 5 km in one day. They will walk:  
 10 km in \_\_\_\_\_ days.  
 25 km in \_\_\_\_\_ days.

50 km in \_\_\_\_\_ days.

2. The camp is 15 km from Tom's house and 12 km from Des' house. Tom's house is \_\_\_\_\_ km further.

3. Tom can hit the ball 35 m far.  
Des can hit the ball 4 m further.  
He can hit the ball \_\_\_\_\_ m.

4. Tom counted 28 birds.  
Des counted 5 less.  
Des counted \_\_\_\_\_ birds.

5. They left the house at 8 o'clock in the morning. The first day they came to the campsite at 3 o'clock in the afternoon. They walked for \_\_\_\_\_ hours.

LO 1.8	LO 4.3	LO 4.7	
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Table 4.26

#### 4.4.7.1.3 Number the houses

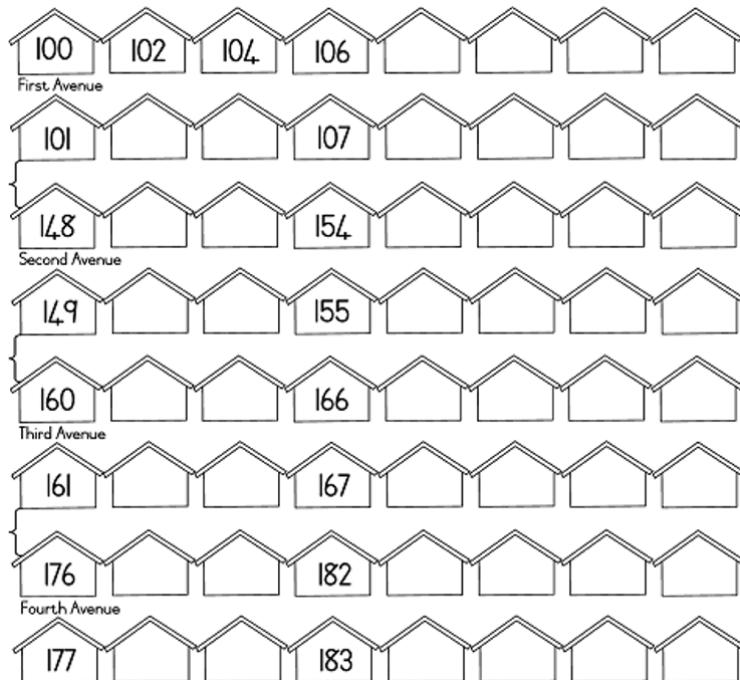


Figure 4.18

LO 1.3	LO 1.4	LO 2.2	
--------	--------	--------	--

Table 4.27

- Complete the counting pattern. Join the numbers.

---

36	64	38	66	70	71	72	51	80
63	37	65	40	67	69	50	73	52
62	60	39	68	41	49	74	79	53
61	45	59	44	48	43	75	54	78
46	58	47	57	42	56	55	76	77

Figure 4.19

- Colour the even numbers in red.
- Colour the uneven numbers in blue.
- Round off to the nearest multiple of 10.

11	22	34
17	29	33
27	41	21
36	26	46

LO 1.2	LO 2.2	LO 1.10	
--------	--------	---------	--

Table 4.28

- Rename and double:

$$\begin{array}{rcl} 32 & = & 30 + 2 \\ & \downarrow & \downarrow \\ & 60 + 4 \\ & = & 64 \end{array}$$

$$\begin{array}{rcl} 24 & = & 20 + 4 \\ & \downarrow & \downarrow \\ & ..... + ..... \\ & = & ..... \end{array}$$

$$\begin{array}{rcl} 11 & = & 10 + 1 \\ & \downarrow & \downarrow \\ & ..... + ..... \\ & = & ..... \end{array}$$

$$14 = ..... + .....$$

$$34 = ..... + ..... \quad 42 = ..... + .....$$

$$13 = ..... + ..... \quad 22 = ..... + .....$$

Figure 4.20

LO 1.8	LO 1.10	
--------	---------	--

Table 4.29

#### 4.4.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.4:** We know this when the learner orders, describes and compares numbers;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

1.10.1 building up and breaking down numbers;

1.10.2 doubling and halving;

- 1.10.3 using concrete apparatus (e.g. counters);
- 1.10.4 number-lines.

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.3:** We know this when the learner calculates elapsed time;

**Assessment Standard 4.7:** We know this when the learner estimates, measures, compares and orders objects using standard measures.

## 4.5 Bonds<sup>5</sup>

### 4.5.1 MATHEMATICS

#### 4.5.2 Mathematics in the world around us

#### 4.5.3 EDUCATOR SECTION

#### 4.5.4 Memorandum

#### 4.5.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. be culturally and aesthetically sensitive across a range of social contexts;
11. explore education and career opportunities; and
12. develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively:** We can all learn from one another. Each person's culture can stimulate and enrich another's. Show how this can be done.
- **Human rights:** Learners must respect the differences amongst themselves. Decide how they are different, yet as worthy as their fellow classmates.
- **A healthy environment:** Flowers enhance our environment. Nature them. Healthy foods give us healthy bodies. Discuss healthy, nourishing foods and list them. Do a survey to find out whether your classmates eat healthy foods.
  
- Number concept and counting to and beyond 200 are practised.

---

<sup>5</sup>This content is available online at <<http://cnx.org/content/m32491/1.1/>>.

- Even and uneven numbers, rounding off numbers and place values are revised.
- The table of 4 and 3 and sharing activities are included in this module.
- Addition with renaming is practised.
- Doubling with renaming.
- Bonds of 19.
- The following activities have also been included: mass, capacity, fractions and distance.
- Learners are introduced to the objects: pyramids, prisms and cylinders.
- The faces of these 3-D shapes are discussed and compared.

#### 4.5.6 LEARNER SECTION

##### 4.5.7 Content

###### 4.5.7.1 ACTIVITY: Bonds [LO 1.2, LO 1.3, LO 1.8, LO 1.9, LO 2.2]

- Count the marbles.

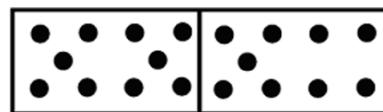


Figure 4.21

----- ni -----

###### 4.5.7.1.1 Bonds of 19.

- Complete:

$$\begin{aligned}
 18 + \underline{\hspace{2cm}} &= 19 \text{ so, } \underline{\hspace{2cm}} + 18 = 19 \\
 10 + \underline{\hspace{2cm}} &= 19 \text{ so, } \underline{\hspace{2cm}} + 10 = 19 \\
 13 + \underline{\hspace{2cm}} &= 19 \text{ so, } \underline{\hspace{2cm}} + 13 = 19 \\
 11 + \underline{\hspace{2cm}} &= 19 \\
 12 + \underline{\hspace{2cm}} &= 19 \\
 16 + \underline{\hspace{2cm}} &= 19 \\
 14 + \underline{\hspace{2cm}} &= 19 \\
 1 + \underline{\hspace{2cm}} &= 19 \\
 3 + \underline{\hspace{2cm}} &= 19 \\
 5 + \underline{\hspace{2cm}} &= 19
 \end{aligned}$$

LO 1.3	LO 1.9	
--------	--------	--

Table 4.30

- Count the marbles.

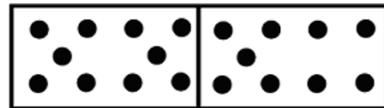


Figure 4.22

ni

- Complete:

$$19 - 1 = \text{_____} \quad \text{so } 19 - 18 = 1$$

$$19 - 4 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 10 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 9 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 3 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 6 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 2 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 5 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 8 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

$$19 - 7 = \text{_____} \quad 19 - \text{_____} = \text{_____}$$

LO 1.3	LO 1.9	
--------	--------	--

Table 4.31

- Here is a mini-dartboard.

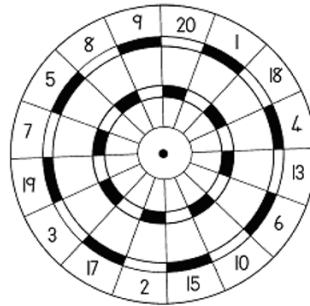


Figure 4.23

- You have 2 darts.

On which numbers must you land to make a total of 19?

- Write the results here.

$$\begin{array}{r}
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19
 \end{array}$$

- What if you had 3 darts?

$$\begin{array}{r}
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19 \\
 - \\
 = 19
 \end{array}$$

LO 1.9

**Table 4.32**

- Complete the counting pattern by joining the numbers.

---

2	36	38	40	52	50	90	82	84
4	32	30	42	48	54	80	88	86
34	6	28	46	44	78	56	68	66
26	22	8	16	14	76	70	58	64
24	20	18	10	12	72	74	62	60

**Figure 4.24**

---

- Complete: How many cherries on the trees?

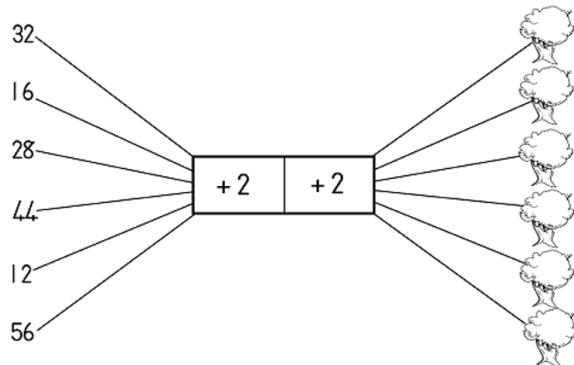


Figure 4.25

LO 1.2		LO 2.2		LO 1.8	
--------	--	--------	--	--------	--

Table 4.33

#### 4.5.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

## 4.6 Shapes<sup>6</sup>

### 4.6.1 MATHEMATICS

#### 4.6.2 Mathematics in the world around us

#### 4.6.3 EDUCATOR SECTION

#### 4.6.4 Memorandum

#### 4.6.5 Critical and developmental outcomes:

The learners must be able to:

<sup>6</sup>This content is available online at <<http://cnx.org/content/m32496/1.1/>>.

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

Integration of Themes:

- **Inclusively:** We can all learn from one another. Each person's culture can stimulate and enrich another's. Show how this can be done.
- **Human rights:** Learners must respect the differences amongst themselves. Decide how they are different, yet as worthy as their fellow classmates.
- **A healthy environment:** Flowers enhance our environment. Nature them. Healthy foods give us healthy bodies. Discuss healthy, nourishing foods and list them. Do a survey to find out whether your classmates eat healthy foods.
- Number concept and counting to and beyond 200 are practised.
- Even and uneven numbers, rounding off numbers and place values are revised.
- The table of 4 and 3 and sharing activities are included in this module.
- Addition with renaming is practised.
- Doubling with renaming.
- Bonds of 19.
- The following activities have also been included: mass, capacity, fractions and distance.
- Learners are introduced to the objects: pyramids, prisms and cylinders.
- The faces of these 3-D shapes are discussed and compared.

#### 4.6.6 LEARNER SECTION

#### 4.6.7 Content

##### 4.6.7.1 ACTIVITY: Shapes [LO 1.2, LO 1.8, LO 2.2, LO 3.1, LO 3.2, LO 3.7]

- Where have you seen these shapes?

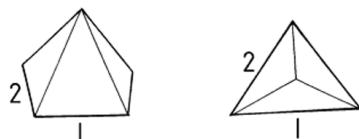


Figure 4.26

- These shapes are called **pyramids**.
- Discuss what is the same/different about them.
- Discuss their **faces** from positions 1 and 2.
- Where have you seen these shapes?

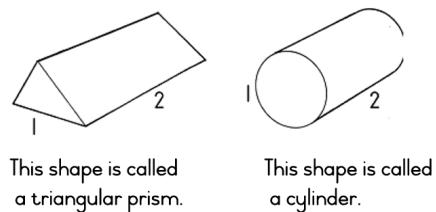


Figure 4.27

- Discuss what is the same/different about them.
- Discuss their **faces** from positions 1 and 2.
- Collect boxes that look like **pyramids**, **prisms** and **cylinders**.
- See which of them can **roll**. Why?
- See which of them can **slide**. Why?

LO 3.1		LO 3.2		LO 3.7	
--------	--	--------	--	--------	--

Table 4.34

1	3	81	7	53	51	43	41	37
83	79	5	55	9	49	45	35	39
87	77	57	71	69	11	33	23	21
85	75	73	59	67	31	13	19	17
89	91	61	63	65	29	27	15	25

Figure 4.28

Complete the counting pattern by joining the numbers.

- Complete: How many people are left in the shop?

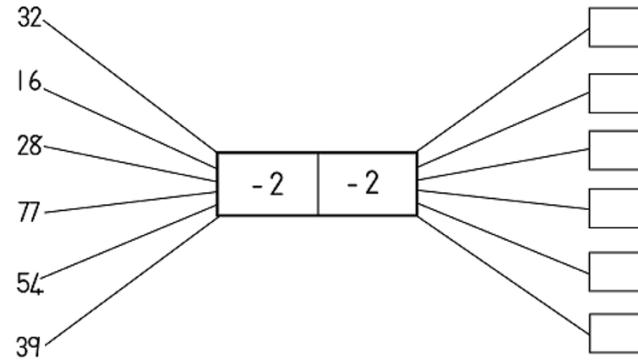


Figure 4.29

LO 1.2	LO 1.8	LO 2.2	
--------	--------	--------	--

Table 4.35

#### 4.6.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards;

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200.

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.1:** We know this when the learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the school environment and in pictures

**Assessment Standard 3.2:** We know this when the learner describes, sorts and compares two-dimensional shapes and three-dimensional objects in pictures and the environment

**Assessment Standard 3.7:** We know this when the learner describes positional relationships (alone and/or as a member of a group or team) between three-dimensional objects or self and a peer.

## 4.7 Vehicles - distance<sup>7</sup>

### 4.7.1 MATHEMATICS

#### 4.7.2 Mathematics in the world around us

#### 4.7.3 EDUCATOR SECTION

#### 4.7.4 Memorandum

#### 4.7.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;

6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;

7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- **Social justice:** The story of the secret signs shows how history can be important. What are the advantages of knowing things about the past?

Learners can divide into groups, visit the library and do more research on the origin of our number system, the Roman numerals, etc.

Learners can do projects on Mathematics found in nature, in the classroom and in the home. They learn to work together in a team, listen to one another and to share ideas.

Discuss whether so called “bargains” are always bargains. What is your attitude towards “sales” in shops? Is it always necessary to give / receive birthday presents? Why do you give presents? When would **not giving** presents be acceptable?

- With the inclusion of the story of the secret sign at this stage, learners are able to understand the significance of the “0” as “place holder” (integrated with Literacy).
- The patterns with addition and subtraction of 6, 7, 8 and 9 are emphasised.
- Telling the time in minutes become easy as learners count the minutes in 5’s.
- Codes are used to find the answer to a puzzle.
- As preparation for the Christmas celebrations, the month of December is used for activities involving the calendar.
- Module 8 concludes with a game where crackers with number sentences are matched to lights on the Christmas tree.

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<sup>7</sup>This content is available online at <<http://cnx.org/content/m32497/1.1/>>.

#### 4.7.6 LEANER SECTION

#### 4.7.7 Content

##### 4.7.7.1 ACTIVITY: Place value [LO 1.5, LO 1.9, LO 3.1]

- Read the story of the secret sign.

(“History of numbers”, MacDonald’s First Library, “Number”)

Abelard was a monk who lived in the twelfth century A.D. He lived in England.

Abelard loved to solve number puzzles.

He used Roman figures such as these with which to count:

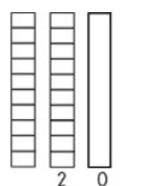
I, II, III, IV, V, VI, VII, VIII, IX, X

One day some Arab merchants told Abelard about a secret sign and nine numbers used by the Arabs for counting. They said any total could be written using nine numbers and the secret sign.

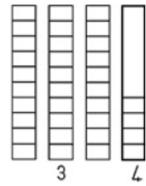
One night Abelard climbed over the wall of the monastery in England and set off to Cordova in Spain. It took him many months to get there and to learn the language. After many exciting and dangerous adventures, he returned to England bringing with him the Arabs’ secret. He used the Arabic numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9 AND the “0” - the secret sign - as a placeholder. Making use of the secret sign “0” he could write any number.

The Arabs learnt much from the Hindus. So Abelard returned to England with the new numbers and the secret sign.

- Our number system, which we use today, is really a combination of the work of the Arabs and the Hindus.
- When we draw 20 like this,



We are saying that there are two groups of ten and "0" units. "0" is the placeholder for the units.



Three groups of ten and 4 units.

Figure 4.30

- Draw the picture numbers for:

#### 4.7.7.1.1 Values and places

- Look at:

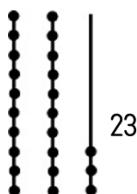


Figure 4.31

The value of 23, when renamed, is  $20 + 3$

The place value of the 2 in 23 is 2 tens and the place value of the 3 in 23 is 3 units.

Tens	Units
2	3
What is the value of:	
61 (rename)	..... + .....
39 .....	
72 .....	
80 .....	
58 .....	

What is the place value of the numbers underlined?

39 .....  
72 .....  
80 .....  
58 .....  
44 .....  
44 .....

Figure 4.32

LO 1.5	
--------	--

Table 4.36

#### 4.7.7.1.2 Mathematics in shape

- Work in groups of 4.
- Here is the key to the sums.

	5		8
	6		9
	7	●	10

Figure 4.33

$$\begin{array}{l} \triangle + \bigcirc = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \square + \square = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \diamond + \bullet = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \triangle \bullet + \bullet = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \bullet \bullet + \triangle = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \square \bigcirc + \bigcirc = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \triangle + \bullet = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \bullet \bullet - \triangle = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \diamond \bullet - \diamond = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \square \square - \bullet = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\ \triangle \triangle - \triangle = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \end{array}$$

Figure 4.34

LO 1.9	LO 3.1	
--------	--------	--

Table 4.37

- Work with a partner.
- Use this key to make up your own sums in shapes. Use “+”, “-“ and “x”.

- Ask someone in the class to write in the answers. Mark the sums.

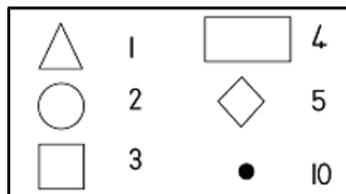


Figure 4.35

1.

2.

3.

4.

5.

6.

7.

How many were correct? \_\_\_\_\_

Name: \_\_\_\_\_

#### 4.7.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.5:** We know this when the learner recognises the place value of digits in whole numbers to at least 2-digit numbers;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.1:** We know this when the learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the school environment and in pictures.

### 4.8 Patterns<sup>8</sup>

#### 4.8.1 MATHEMATICS

#### 4.8.2 Mathematics in the world around us

#### 4.8.3 EDUCATOR SECTION

#### 4.8.4 Memorandum

#### 4.8.5 Critical and developmental outcomes:

The learners must be able to:

<sup>8</sup>This content is available online at <<http://cnx.org/content/m32498/1.1/>>.

1. identify and solve problems and make decisions using critical and creative thinking;
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3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
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- 
- With the inclusion of the story of the secret sign at this stage, learners are able to understand the significance of the “0” as “place holder” (integrated with Literacy).
- The patterns with addition and subtraction of 6, 7, 8 and 9 are emphasised.
- Telling the time in minutes become easy as learners count the minutes in 5’s.
- Codes are used to find the answer to a puzzle.
- As preparation for the Christmas celebrations, the month of December is used for activities involving the calendar.
- Module 8 concludes with a game where crackers with number sentences are matched to lights on the Christmas tree.

#### 4.8.6 LEARNER SECTION

#### 4.8.7 Content

##### 4.8.7.1 ACTIVITY: Patterns [LO 1.8, LO 1.9, LO 1.11, LO 1.12, LO 2.2, LO 2.4]

- Discover the pattern and complete it.
- Tell your friend what you have discovered.

$$9 + 1 = 10$$

$$9 + 2 = \dots$$

$$9$$

$$8 + 2 = 10$$

$$8 + 3 = \dots$$

8  
 $7 + 3 = 10$   
 $7 + 4 = \dots$   
 7  
 $6 + 4 = 10$   
 $6 + 5 = \dots$   
 6  
 $18 - 9 = 9$   
 $17 - 9$   
 16  
 $17 - 8 =$   
 $16 - 8 =$   
 15  
 $16 - 7 =$   
 $15 - 7 =$   
 14  
 $15 - 6 =$   
 $14 - 6 =$   
 13  
 $9 + 5 =$   
 $19 + 5$   
 $29 + 5$   
 39  
 49  
 $8 + 6 =$   
 $18 + 6$   
 28  
 38  
 48  
 $7 + 7 =$   
 $17 + 7 =$   
 27  
 37  
 47  
 $8 + 8 =$   
 $18 + 8 =$   
 28  
 38  
 48

LO 1.8		LO 1.11		LO 2.4	
--------	--	---------	--	--------	--

Table 4.38

- Do you remember the pattern?

---

+ 9	- 9
10	10
19	19
29	29
59	59
89	87
39	35
69	68
49	44
79	72
99	99

**Figure 4.36**


---

- Complete the pattern:

4, (+9) 13, +9 ..... , ..... , ..... , .....  
 50, (-9) ..... , ..... , ..... , ..... , .....

LO 1.8	LO 2.2	
--------	--------	--

**Table 4.39**

---

+ 9	- 9
10	10
7	19
6	14
8	11
9	17
4	18
2	15
5	16
1	12
0	13

**Figure 4.37**


---

- Check with a friend to compare your answers.

LO 1.9	LO 1.12	LO 2.2	
--------	---------	--------	--

**Table 4.40**

- Arrange these groups of numbers from the least to the most.
- Discuss the counting pattern that they make.
- Work in groups of four.

1. 60, 30, 90, 80, 40, 10, 50, 20, 70,

Counting pattern:

2. 23, 31, 27, 35, 25, 37, 29, 33,

Counting pattern:

3. 25, 13, 19, 7, 3 1, 1,

Counting pattern:

4. 40, 36, 28, 8, 20, 16, 4, 32, 1 2, 24,

Counting pattern:

#### 4.8.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.8:** We know this when the learner can perform calculations, using appropriate symbols, to solve problems;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems;

**Assessment Standard 1.12:** We know this when the learner checks the solution given to problems by peers.

**Learning Outcome 2:** The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.

**Assessment Standard 2.2:** We know this when the learner copies and extends simple number sequences to at least 200;

**Assessment Standard 2.4:** We know this when the learner describes observed patterns.

### 4.9 Directions<sup>9</sup>

#### 4.9.1 MATHEMATICS

#### 4.9.2 Mathematics in the world around us

#### 4.9.3 EDUCATOR SECTION

#### 4.9.4 Memorandum

#### 4.9.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and develop entrepreneurial opportunities.

- Integration of Themes:

- **Social justice:** The story of the secret signs shows how history can be important. What are the advantages of knowing things about the past?

Learners can divide into groups, visit the library and do more research on the origin of our number system, the Roman numerals, etc.

Learners can do projects on Mathematics found in nature, in the classroom and in the home. They learn to work together in a team, listen to one another and to share ideas.

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<sup>9</sup>This content is available online at <<http://cnx.org/content/m32499/1.1/>>.

Discuss whether so called “bargains” are always bargains. What is your attitude towards “sales” in shops? Is it always necessary to give / receive birthday presents? Why do you give presents? When would **not giving** presents be acceptable?

- With the inclusion of the story of the secret sign at this stage, learners are able to understand the significance of the “0” as “place holder” (integrated with Literacy).
- The patterns with addition and subtraction of 6, 7, 8 and 9 are emphasised.
- Telling the time in minutes become easy as learners count the minutes in 5's.
- Codes are used to find the answer to a puzzle.
- As preparation for the Christmas celebrations, the month of December is used for activities involving the calendar.
- Module 8 concludes with a game where crackers with number sentences are matched to lights on the Christmas tree.

#### 4.9.6 LEARNER SECTION

##### 4.9.7 Content

###### 4.9.7.1 ACTIVITY: Directions [LO 1.6, LO 1.9, LO 1.11, LO 3.8]

- Travel along the lines and complete the routes:

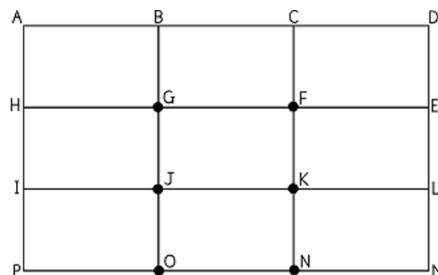


Figure 4.38

1. From M to C:

M, L, \_\_\_\_\_ C.  
or

M, N, \_\_\_\_\_ C.

2. From M to A:

M, \_\_\_\_\_ A.  
or

M, \_\_\_\_\_ A.

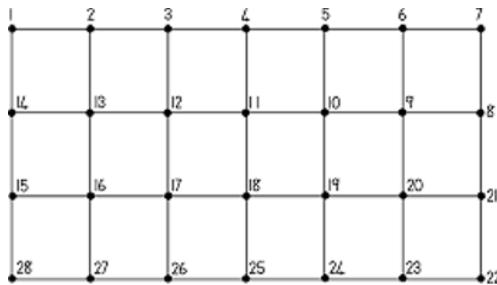
or

M, \_\_\_\_\_ A.

LO 3.8	
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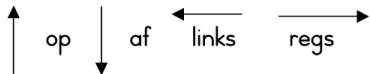
**Table 4.41**

- This is where my friends and I live.

**Figure 4.39**

- Ek woon by 10.
- Ron woon by 5.
- Sisulu woon by 27.
- Piet woon by 22.

Om by my maats te gaan kuier moet ek rigtings ken. Ek gebruik hierdie tekens.

**Figure 4.40**

- As ek by Ron wil gaan kuier, moet ek op stap van 10 tot 5.
- Skryf die rigtings (tekens) van my huis by 10 na:
- Sisulu se huis:
- Piet se huis:
- Bespreek of daar ander roetes ook is om by hulle te kom.

LO 3.8	
--------	--

**Table 4.42**

- Travel long the lines and complete the routes.

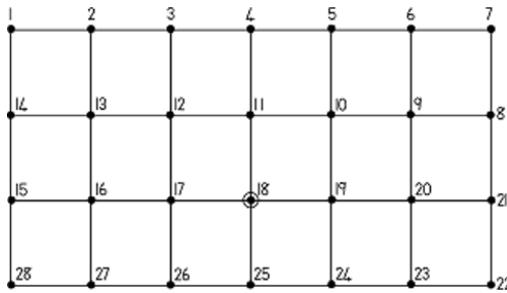


Figure 4.41

- My friends have to travel to 18 where the school is.
- Pat travels from 28 to 18.

This is her route: 28..... .... .....

If each number is 2 km from the next number on the route, then Pat travels \_\_\_\_\_ km to school.

If she pays 20c for every 2 km she will pay \_\_\_\_\_ to get to school. Sam's route is from 7 to 18.

7, \_\_\_\_\_  
His route is \_\_\_\_\_ km.  
He pays \_\_\_\_\_ to school.  
He pays \_\_\_\_\_ to school and back home.

- Does Sam pay more or less than Pat? \_\_\_\_\_
- Give a reason for your answer.

LO 1.6	LO 1.11	LO 3.8	
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Table 4.43

- Complete.

Pat goes to school on this bus.

1. This bus travels on route 2. (only 2's are used in the number sentences).

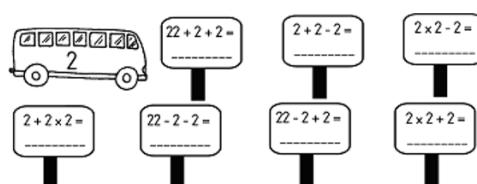
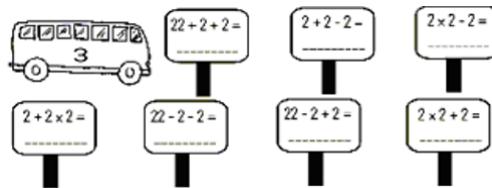


Figure 4.42

Mo goes to school on this bus.

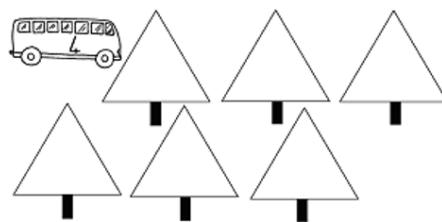
2. This bus travels on route 3. Write the number sentences on the stops. Use only 3's.



**Figure 4.43**

Ann goes to school on this bus.

3. This bus travels on route 4. Write the number sentences, using only 4's.



**Figure 4.44**

LO 1.9	
--------	--

**Table 4.44**

#### 4.9.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.6:** We know this when the learner solves money problems involving totals and change in rand and cents;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems;

**Learning Outcome 3:** The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.

**Assessment Standard 3.8:** We know this when the learner understands directions.

## 4.10 Telling the time<sup>10</sup>

### 4.10.1 MATHEMATICS

#### 4.10.2 Mathematics in the world around us

#### 4.10.3 EDUCATOR SECTION

#### 4.10.4 Memorandum

#### 4.10.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- **Social justice:** The story of the secret signs shows how history can be important. What are the advantages of knowing things about the past?

Learners can divide into groups, visit the library and do more research on the origin of our number system, the Roman numerals, etc.

Learners can do projects on Mathematics found in nature, in the classroom and in the home. They learn to work together in a team, listen to one another and to share ideas.

Discuss whether so called “bargains” are always bargains. What is your attitude towards “sales” in shops? Is it always necessary to give / receive birthday presents? Why do you give presents? When would **not giving** presents be acceptable?

- With the inclusion of the story of the secret sign at this stage, learners are able to understand the significance of the “0” as “place holder” (integrated with Literacy).
- The patterns with addition and subtraction of 6, 7, 8 and 9 are emphasised.
- Telling the time in minutes become easy as learners count the minutes in 5’s.
- Codes are used to find the answer to a puzzle.
- As preparation for the Christmas celebrations, the month of December is used for activities involving the calendar.
- Module 8 concludes with a game where crackers with number sentences are matched to lights on the Christmas tree.

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<sup>10</sup>This content is available online at <<http://cnx.org/content/m32500/1.1/>>.

#### 4.10.6 LEANER SECTION

#### 4.10.7 Content

ACTIVITY: Telling the time [LO 4.1, LO 4.3]

- Dad gave Des a present.
- Now he can tell the time.
- He counts the minutes past the hour in 5's.
- He counts the minutes to the next hour in 5's.
- He finds out that there are \_\_\_\_\_ minutes in an hour.



Figure 4.45

- As the long minute hand moves to 1, Des says, "Five past one."
- As the long minute hand moves to 2, Des says, " ..... past ..... "
- As the long minute hand moves to 3, Des says, " ..... minutes past ..... ". This can also be "a quarter past one."

What time is it now?

----- minutes past -----  
 ----- minutes past -----  
 ----- minutes past -----

- Des must meet Mike and Tom to go shopping for presents.
- He must meet Mike and Tom at 2 o'clock.
- He watches the long hand and counts the minutes to 2 o'clock.
- He says:

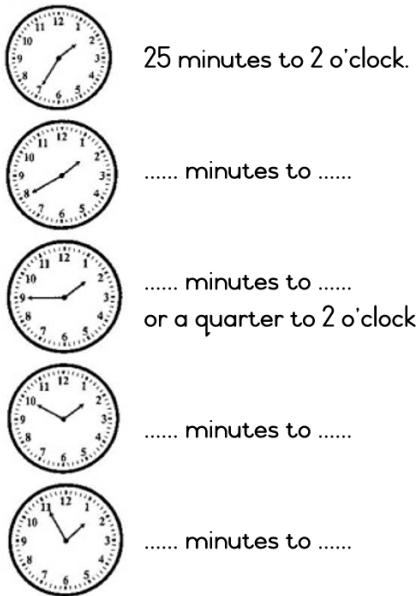


Figure 4.46

"Hip, hip hooray," says Des.

Only ..... more minutes to 2 o'clock.  
And off he went to meet his friends.

LO 4.1		LO 4.3	<input type="checkbox"/>
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Table 4.45

#### 4.10.8 Assessment

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assesseringstandaard 4.1:** We know this when the learner reads analogue and digital clock time in hours and minutes;

**Assesseringstandaard 4.3:** We know this when the learner calculates elapsed time.

## 4.11 Adding and subtracting<sup>11</sup>

### 4.11.1 MATHEMATICS

#### 4.11.2 Mathematics in the world around us

#### 4.11.3 EDUCATOR SECTION

#### 4.11.4 Memorandum

#### 4.11.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;

6. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;

7. reflect on and explore a variety of strategies to learn more effectively;
8. participate as responsible citizens in the life of local, national, and global communities;
9. be culturally and aesthetically sensitive across a range of social contexts;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- **Social justice:** The story of the secret signs shows how history can be important. What are the advantages of knowing things about the past?

Learners can divide into groups, visit the library and do more research on the origin of our number system, the Roman numerals, etc.

Learners can do projects on Mathematics found in nature, in the classroom and in the home. They learn to work together in a team, listen to one another and to share ideas.

Discuss whether so called “bargains” are always bargains. What is your attitude towards “sales” in shops? Is it always necessary to give / receive birthday presents? Why do you give presents? When would **not giving** presents be acceptable?

- With the inclusion of the story of the secret sign at this stage, learners are able to understand the significance of the “0” as “place holder” (integrated with Literacy).
- The patterns with addition and subtraction of 6, 7, 8 and 9 are emphasised.
- Telling the time in minutes become easy as learners count the minutes in 5’s.
- Codes are used to find the answer to a puzzle.
- As preparation for the Christmas celebrations, the month of December is used for activities involving the calendar.
- Module 8 concludes with a game where crackers with number sentences are matched to lights on the Christmas tree.

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<sup>11</sup>This content is available online at <<http://cnx.org/content/m32501/1.1/>>.

#### 4.11.6 LEANER SECTION

#### 4.11.7 Content

ACTIVITY: Adding and subtracting [LO 1.6, LO 1.10, LO 1.11]

- Read these advertisements. Complete them.

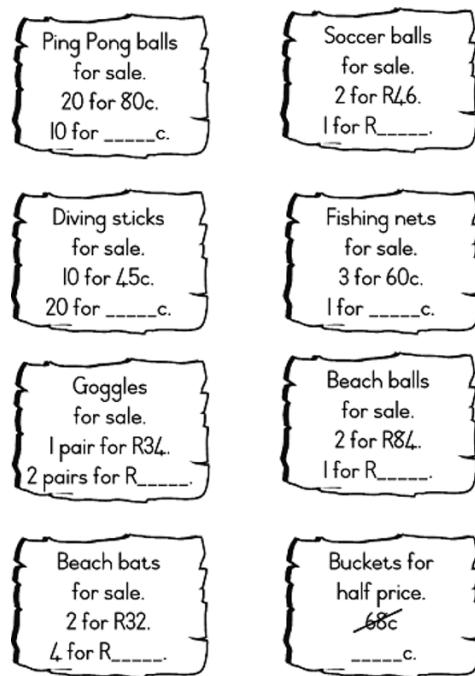


Figure 4.47

LO 1.6	LO 1.10	
--------	---------	--

Table 4.46

- My friends went shopping for bargains (see p. 20). Tell a friend how you got the answer.
- Voltooii:

1. Mo bought 5 ping pong balls for ..... c and one fishing net for .....c.  
She paid ..... ..... = .....c
2. Bob bought 4 beach bats for R ..... and 1 pair of goggles for R .....  
He paid R ..... + R ..... = .....
3. Mom gave Des R1 to buy diving sticks.  
He bought ..... diving sticks for ..... c.  
He took ..... change home.

4. Tom paid R ..... for 2 beach balls. He also bought 5 ping pong balls for ..... c.  
 He paid R ..... + ..... c. = .....

5. What will 3 pairs of goggles cost if the price is R30 for 1 pair? .....

LO 1.6		LO 1.10		LO 1.11	<input type="checkbox"/>
--------	--	---------	--	---------	--------------------------

Table 4.47

- Here is a present for you.
- Write the answers of the number sentences to find out what the code is for:

A = -----  
 B = -----  
 C = -----  
 D = -----  
 E = -----  
 F = -----  
 G = -----  
 H = -----  
 I = -----  
 J = -----  
 K = -----  
 L = -----

---



Figure 4.48

A  $36 + 5 =$  -----  
 B  $28 - 3 =$  -----  
 C  $94 - 3 =$  -----  
 D  $9 + 8 =$  -----  
 E  $17 - 7 =$  -----  
 F  $12 + 12 =$  -----  
 G  $6 + 6 + 6 =$  -----  
 H  $6 \times 2 =$  -----  
 I  $3 \times 3 =$  -----  
 J  $67 - 5 =$  -----  
 K  $50 + 20 =$  -----  
 L  $88 - 80 =$  -----

- Use the code to find out what is in the box.

Code: 25, 41, 8, 8

Answer: .....

- Check with a friend to see what he found in the box.

#### 4.11.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.6:** We know this when the learner solves money problems involving totals and change in rand and cents;

**Assessment Standard 1.10:** We know this when the learner uses the following techniques:

- 1.10.1 building up and breaking down numbers;
- 1.10.2 doubling and halving;
- 1.10.3 number-lines;
- 1.10.4 rounding off in tens.

**Assessment Standard 1.11:** We know this when the learner explains own solutions to problems;

### 4.12 Calendar<sup>12</sup>

#### 4.12.1 MATHEMATICS

#### 4.12.2 Mathematics in the world around us

#### 4.12.3 EDUCATOR SECTION

#### 4.12.4 Memorandum

#### 4.12.5 Critical and developmental outcomes:

The learners must be able to:

1. identify and solve problems and make decisions using critical and creative thinking;
2. work effectively with others as members of a team, group, organisation and community;
3. organise and manage themselves and their activities responsibly and effectively;
4. collect, analyse, organise and critically evaluate information;
5. communicate effectively using visual, symbolic and/or language skills in various modes;
6. use science and technology effectively and critically, showing responsibility towards the environment and the health of others;
7. demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;
8. reflect on and explore a variety of strategies to learn more effectively;
9. participate as responsible citizens in the life of local, national, and global communities;
10. explore education and career opportunities; and

develop entrepreneurial opportunities.

- Integration of Themes:
- **Social justice:** The story of the secret signs shows how history can be important. What are the advantages of knowing things about the past?

---

<sup>12</sup>This content is available online at <<http://cnx.org/content/m32502/1.1/>>.

Learners can divide into groups, visit the library and do more research on the origin of our number system, the Roman numerals, etc.

Learners can do projects on Mathematics found in nature, in the classroom and in the home. They learn to work together in a team, listen to one another and to share ideas.

Discuss whether so called “bargains” are always bargains. What is your attitude towards “sales” in shops? Is it always necessary to give / receive birthday presents? Why do you give presents? When would **not giving** presents be acceptable?

- With the inclusion of the story of the secret sign at this stage, learners are able to understand the significance of the “0” as “place holder” (integrated with Literacy).
- The patterns with addition and subtraction of 6, 7, 8 and 9 are emphasised.
- Telling the time in minutes become easy as learners count the minutes in 5’s.
- Codes are used to find the answer to a puzzle.
- As preparation for the Christmas celebrations, the month of December is used for activities involving the calendar.
- Module 8 concludes with a game where crackers with number sentences are matched to lights on the Christmas tree.

#### 4.12.6 LEARNER SECTION

#### 4.12.7 Content

##### 4.12.7.1 ACTIVITY: Calendar [LO 1.1, LO 1.2, LO 1.3, LO 1.9, LO 4.2]

- Here is a calendar for December.

S	M	D	W	D	V	S
	1	2	3	4	5	6
7	8	9	10			
	15					
					26	
			31			

Figure 4.49

- Write in the missing numbers.
- M stands for .....
- F stands for .....
- The 10th of December is on a .....
- Mo’s birthday is on the 15th of December. How many days is that before Christmas? ..... days.

- Tom's birthday is 7 days after Mo's birthday. Tom's birthday is on the ..... of December.
- The 30th of November is on a .....

LO 1.9	LO 4.2	
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Table 4.48

- Complete the bus route to the next town.

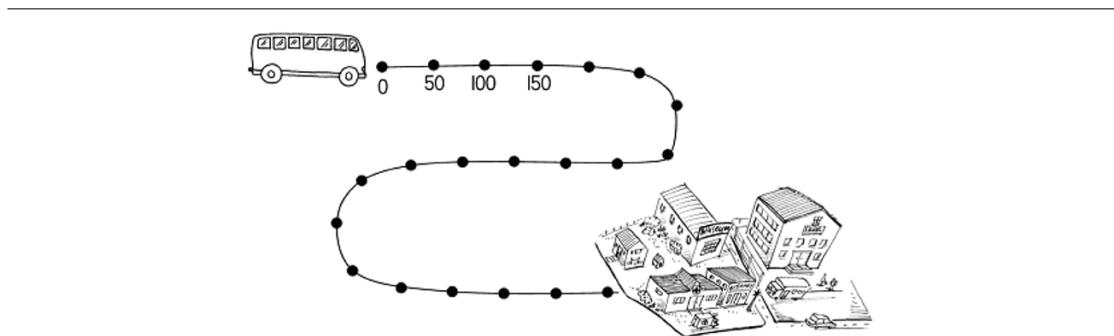
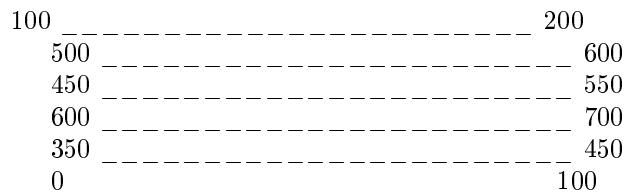


Figure 4.50

- Mark the stop at 225 with a X.
- Mark the stop at 305 with a O.
- Mark the stop at 999 with a #.
- Which number on the route comes between:



- If the bus takes 5 minutes to travel between 0 and 50, how long does the bus travel from:

0 to 200 ? \_\_\_\_\_ minutes  
 0 to 400 ? \_\_\_\_\_ minutes  
 0 to 600 ? \_\_\_\_\_ minutes

LO 1.2	LO 1.3	
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Table 4.49

- Guess how many peanuts in each packet.

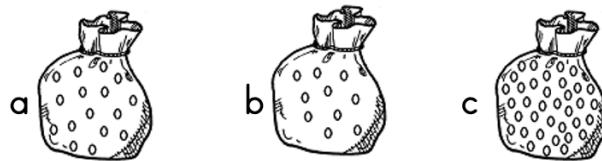


Figure 4.51

1. Packet C had the \_\_\_\_\_ most/least
2. Packet B had the \_\_\_\_\_ most/least
3. Packet A had \_\_\_\_\_ (more/less) than C.
4. Packet B had \_\_\_\_\_ (more/less) than A.

- Now count the peanuts in:

A = \_\_\_\_\_ B = \_\_\_\_\_ C = \_\_\_\_\_

- Check and see whether your answers in 1, 2, 3 and 4 were wrong ..... yes/no or correct ..... yes/no
- Draw 63 peanuts in this packet.

Arrange them in groups of ten.



Figure 4.52

LO 1.1	LO 1.3	
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Table 4.50

- Make 6 different numbers each time.
- Write their number names.

1. Use only the digits: 1, 2 and 3.

1 2 twelve ..... 12 .....

before after

..... ..... ..... - .....

..... ..... ..... - .....

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..... ..... ..... - .....

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LO 1.3	
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Table 4.51

- Play with a friend.
- Take turns to match a light to a cracker.
- Colour your crackers in red.
- Your friend can use yellow.

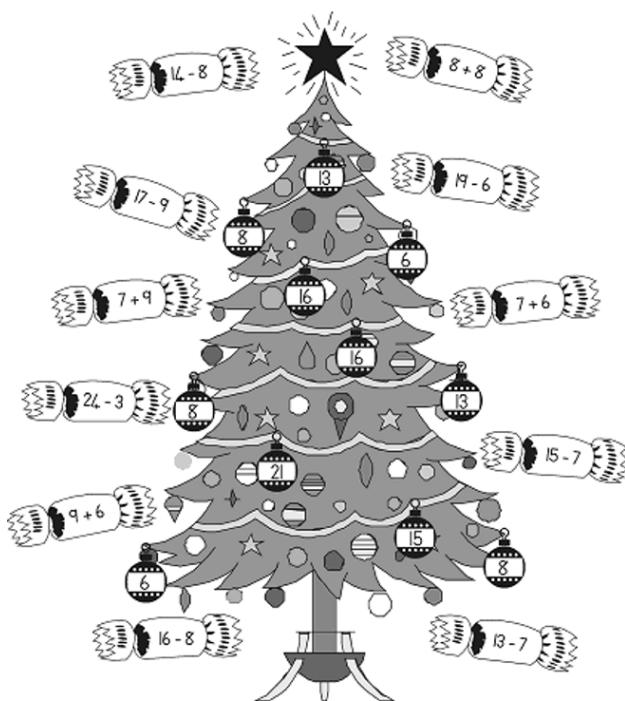


Figure 4.53

LO 1.9	<input type="checkbox"/>
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Table 4.52

#### 4.12.8 Assessment

**Learning Outcome 1:** The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

**Assessment Standard 1.1:** We know this when the learner counts to at least 100 everyday objects reliably;

**Assessment Standard 1.2:** We know this when the learner counts forwards and backwards in:

- 1.2.1 ones from any number between 0 and 200;
- 1.2.2 tens from any multiple of 10 between 0 and 200;
- 1.2.3 fives from any multiple of 5 between 0 and 200;
- 1.2.4 twos from any multiple of 2 between 0 and 200;

**Assessment Standard 1.3:** We know this when the learner knows and reads number symbols from 1 to at least 200 and writes number names from 1 to at least 100;

**Assessment Standard 1.9:** We know this when the learner performs mental calculations;

**Learning Outcome 4:** The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.

**Assessment Standard 4.2:** We know this when the learner names in order the days of the week and the months of the year.

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